

THE MINING AND METALLURGICAL JOURNAL.

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VOL. XVII., No. 4

LOS ANGELES, CAL., MAY 15, 1897

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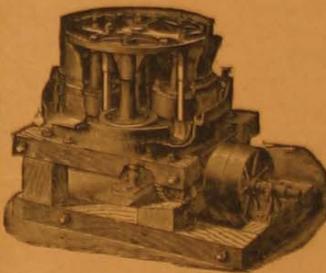
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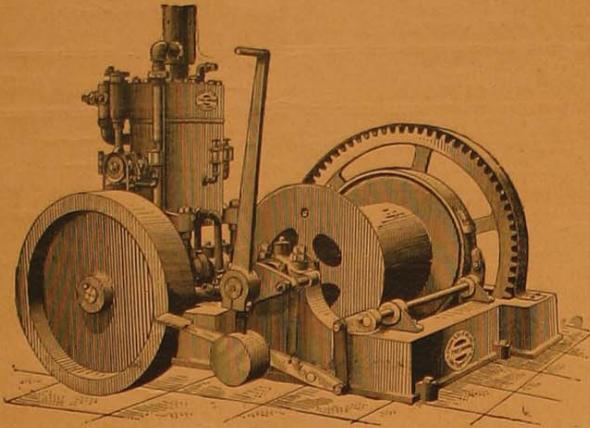
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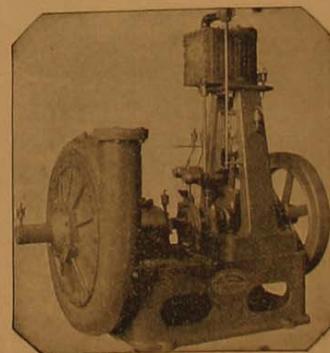
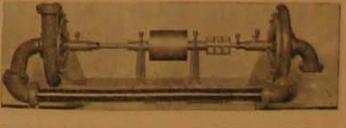
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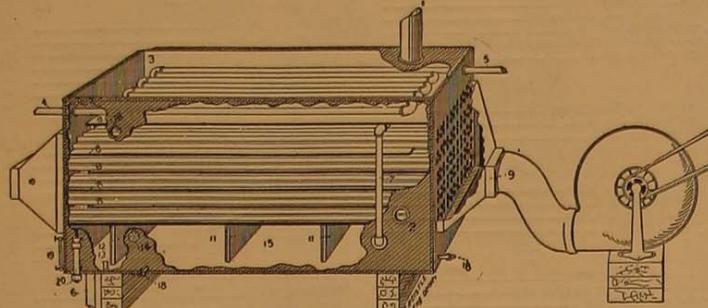
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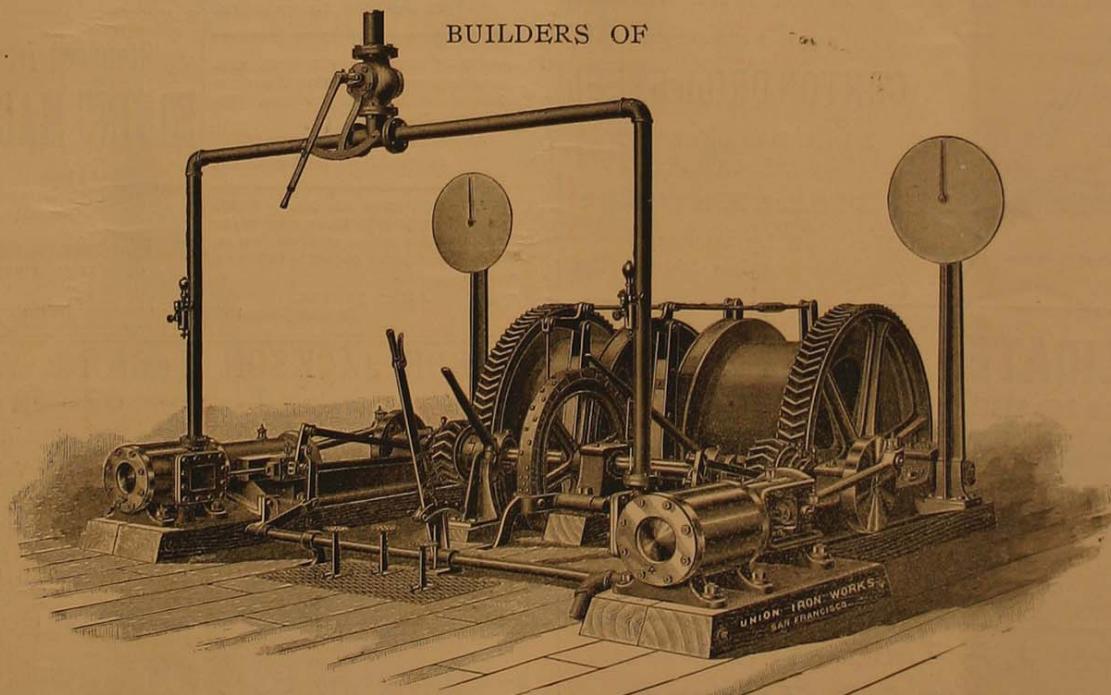
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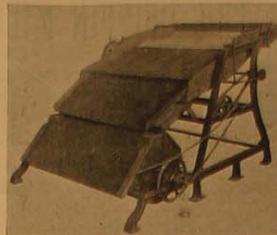
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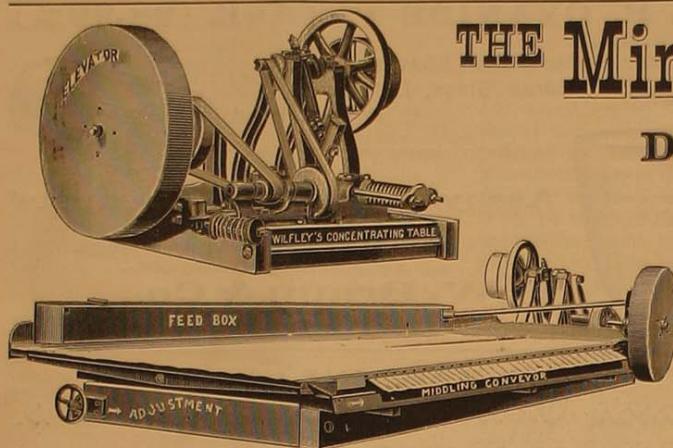
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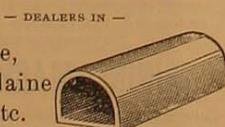
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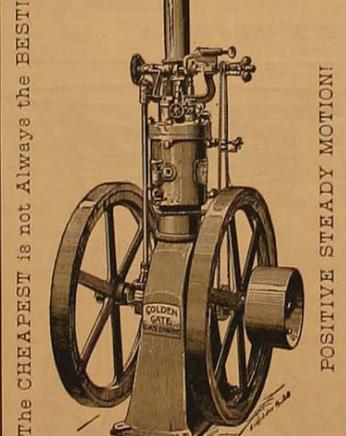
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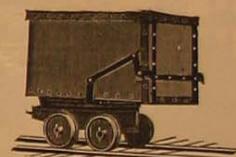
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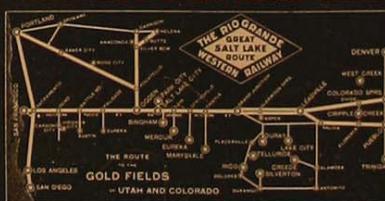
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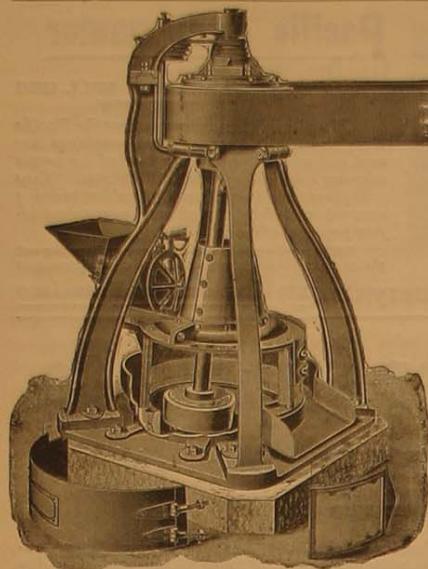
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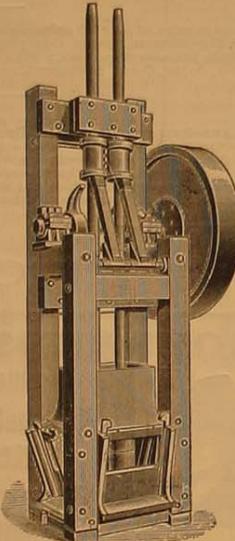
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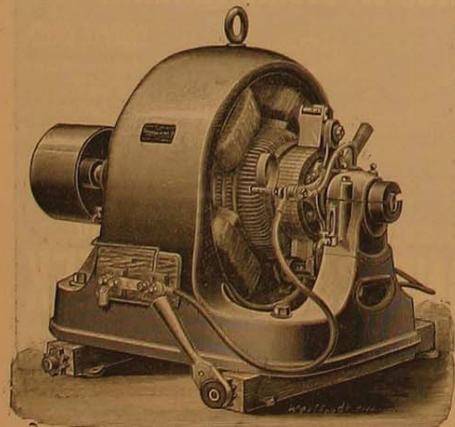
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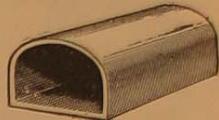


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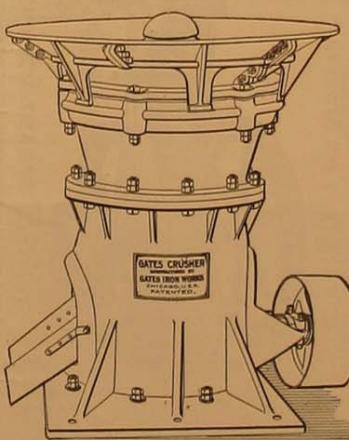
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DEPARTURE OF THE COMMISSION.

The bimetallic commission has sailed for Europe, and it is followed by the hope of the American people that it will be successful, yet nobody supposes that it will accomplish anything of value to this country. The circumstances are unfavorable, and what they want to accomplish will be resisted with unusual pertinacity by the great European powers. Every important nation in Europe is doing its best to accumulate gold, and as fast as they can they are drawing it from the United States, and they are succeeding because the governments and corporations of this country are so heavily indebted to European capitalists that we are constantly depleted of our stock of gold to pay annual interest and dividends.

No doubt the commission will have a good time at Uncle Sam's expense, but we opine that will be all the compensation or consolation they will receive for their time and trouble.

What is wanted is not international so much as national bimetallism. The commission had better have remained at home and devoted their energies to bimetallism, and to saving to the treasury their salaries and expenses. It is to be hoped that this will be the last wild goose chase, and that no president hereafter will stake his reputation on doing that which is impossible. But we suppose there must be about so much indulgence in folly before that which is sensible and practicable will be undertaken.

There are other unfavorable circumstances than what have already been mentioned. The general arbitration treaty has been refused ratification by the United States Senate, which maddened John Bull. Besides, a tariff law in all probability will be enacted, which will have the effect to some extent at least to shut foreigners out of our markets, and none of the important European nations like that. There is not the best of feeling on the other side of the Atlantic sea towards us just at this time, certainly no such feeling as will incline any of those countries to oblige us by doing a generous act.

A DISCLOSURE.

Mr. Dingley, of Maine, chairman of the Ways and Means Committee, and leader of the House of Representatives has been interviewed, and he has frankly stated the object his party has in view in enacting a high duty tariff law. According to him, the chief object is to produce a surplus of revenue that the government may retain the greenbacks received in the Treasury, and not put them out until they can be exchanged for gold.

It has been supposed that the real purposes are to produce a sufficiency of revenue to defray the expenses of the government, to encourage the enlargement and diversification of industries, and to protect American labor against competition from cheap foreign labor; but, according to Mr. Dingley, they are incidental and inferior to another and the main purpose of curtailing the circulation of the greenbacks, or, in more explicit language, the plan is to more heavily tax the people in order to contract the volume of the circulating medium, and to further cripple the energies of the people, by retarding enterprise and embarrassing commerce.

It is difficult to keep up with the schemes of the gold powers, devised to promote the interests of the possessors of gold, and at the expense of the masses, to enable them to further rob the laborer of his rightful share of wealth produced by his toil. While this plan can have no other effect than to contract the volume of money, nothing has been devised or suggested to expand the volume, or even to counterbalance the contraction proposed. The gold power seems to have embarked on a career of madness. "Whom the gods would destroy they first make mad."

WHY NOT?

The House of Representatives acts as if it had nothing to do while the Senate is incubating a tariff bill, and it is doing nothing but to act on the appropriation bills which the last congress failed to pass, and adjourning. It has even relieved itself of the labor of daily meeting and adjourning by adopting a resolution to meet only on Mondays and Thursdays of each week. There is no telling how much time the Senate will spend on the tariff bill. It is a very long bill, and there are a large number of senators who are long-winded talkers.

It seems to us that the House had better take up some other subjects, and pass such bills as the majority may deem wise. The work of the regular session, which commences on the first Monday of December, might be anticipated, and that session relieved of some of its labors. Bills passed by either branch of Congress during the present session will not die till the Congress expires, on the 4th day of March, 1899. It does seem that work could be materially advanced if the House would at this session pass such bills as seem necessary or useful.

The money question cannot be kept down, all sides want it taken up, and there is no reason why the House of Representatives should not give it consideration at the present time. It would certainly be better than to while away the time in idleness. The country is discussing the question, and the people would be glad to hear what members of Congress have to say about it. The action of the House is indefensible, and it is setting a very bad precedent.

WHAT WALL STREET WANTS.

Mr. Thurber, of New York, and others of the Wall street clan, would have the law so changed that all our bonds now payable in coin, as to make them payable in gold coin. This will enlarge the function of gold and increase the demand for it, and make it more potential than it now is.

The reason assigned for this change is that it will enable us to obtain money from abroad. It is all very pleasant while we are receiving and expending foreign money, for times are easy, as there is an increase of money, but the situation is quite different when pay-day comes around, and for interests and dividends it makes its appearance every six months.

Our government and corporations owe British people \$1,500,000,000, and it would seem that we are sufficiently distressed to pay the interest on that without incurring a larger indebtedness. A large number of our people believe that it would have been better had we postponed some of our railroad building and other enterprises until we had been able to carry them on with our own money. It is feebleness to continually look across the water for money. We had better take steps that give us money enough of our own, for we will never be prosperous until we rely on our own resources.

The proposal to get money from abroad is a confession that we have not enough of our own. The goldites, however continually assert that we have a plentiful volume of money, yet they urge measures that will enable us to borrow foreign money. We certainly would not borrow if there was no need for it.

When we adopt policies that will promote American interests, we shall have no occasion to ask for foreign loans.

ARE WE PROSPEROUS?

Bank clearances are falling off and failures in business continue. These facts do not indicate prosperity. We do not hear of any diminution of idleness. It is true that a tariff law has not been enacted, but that one will be, which will give more encouragement to industries, no one doubts. With this certainty in mind, it would seem that steps should have been taken ere this to inaugurate new enterprises or enlarge old ones, but little or nothing has been done, and it cannot be for the want of money, if the pretensions of the goldites are to be believed.

The fact is, that the most depressing influence today is the meagreness of the money volume; and it is the greatest cause of the depression that has gradually been coming upon the country for several years. When more money is provided there will be more enterprise, more employment for the people and less idleness and want. While this is apparent, nothing is suggested by the President or by the majority in Congress that will assure a larger volume. How much longer are we to suffer before the cause of business dullness will be recognized by the powers that be?

Anyone having an intention of filing new mining locations will do well to look into the law providing for such matters passed at the last session of the legislature. The old law has been changed and a mistake in this particular might cause complication or a serious loss to some one when a little precaution would insure the party's right.

CORRESPONDENCE

CALIFORNIA.

ORD MOUNTAIN MINING DISTRICT,

May 16, 1897.

EDITOR JOURNAL:—Having a little news from the Mojave Desert, that perhaps might interest some of your readers. In reference to gold mining on the desert, I would like to state that we are having quite a little boom in the Ord Mountain mining district.

Jos. Rice and James Strong, prospectors for the Queen Mining Company, have struck a rich find, which they discovered last February—a rich porphyry ledge 5 to 6 feet wide—assayed by Selby & Co., gave them \$233.17 in gold. They are now down 25 feet on the shaft, and the last assay of the claim gives \$383 in free milling gold. They have various other claims which show up nearly as well, and give promise to be a big thing.

The Demi-Centum Prospecting and Developing Company, of San Francisco, have a force of men developing and prospecting their claims. They have sunk a 33-foot shaft on a ledge which assays \$50 to the ton, and gives good indication of being a first-class property. Another claim, called the Griffith, assays \$100 to the ton, with a 5-foot ledge of free milling gold. They are taking out lots of ore.

Messrs. Blackman & Jett, of Los Angeles, have a promising prospect, which improves with every foot sunk. They have recently discovered another rich claim, which gives good prospect of being a first-class claim.

John Read, one of the best miners on the desert, is here, and washing out gold with a dry placer machine. He has also several good quartz claims which are being developed.

Messrs. Ackerman & Deering have an exceptionally good claim of a 3-foot ledge, assaying \$200 to the ton, and shows the ore thickly studded with gold.

This district promises to be one of the best in this part of the desert. Prospectors are flocking in and finding good claims. Lots of feed can be had for horses and pack animals. There is a lack of wood, but plenty of water for camp purposes.

An English syndicate has bonded a group of claims for \$50,000, and are preparing to put a large force of men to work on them. There will be a boom here this summer. Already 30 to 40 men are at work taking out ore in different claims. A mill is being brought to Daggett, 14 miles from here, for the purpose of milling ore from this district, Daggett being the nearest point available for water for milling purposes. Ore can be hauled for \$2 a ton, and a good wagon road all the way.

Queen City, the centre of the excitement, is already dotted with tents, and the sound of exploding giant powder in the hills, and the busy hammering and drilling goes along, and everything shows promises to be a mining center. Everybody here is enthusiastic with the promising outlook, and hard-working and industrious. This is no excitement built on wind, as the claims in this district speak for themselves.

PROSPECTOR.

EAGLE MOUNTAINS, May 12, 1897:

EDITOR JOURNAL:—The following are a few facts relative to the progress made in mining in the Eagle Mountains, located fifty miles from Walters on the S. P. Ry. The Iron Chief mine, which is considered as the best property in this district and I therefore

mention it first, is owned by Monroe Stewart, J. S. Beach, J. S. Moore and W. D. Stephens, the latter having discovered the claim in Feb. 1896. Operations on the mine were begun in month of March, 1896, and has been prosecuted as diligently as possible, considering the lack of capital and numerous other natural drawbacks.

There are two shafts on the property, one of which is eighty feet deep. Both are connected by a level 100 feet in length. There has been fifty-five tons of ore shipped, sampling on an average of \$80 per ton, and have upwards of 200 tons of cyaniding ore on the dump that averages from \$20 to \$25 per ton. The character of the ore, as the name implies, is iron of the Hematite character, containing lime and porphyry, with a well defined contact of lime and granite. Owing to the isolation of this camp, lack of water, etc, the general development of the many mineral veins has been necessarily slow, but aside from the Iron Chief, there are numerous very promising properties, the most noted of which is the Cactus mine, discovered and located by the veteran prospector, Frank Baxter, and under bond to Messrs. Coon & Wilbur of Riverside. Sinking upon this claim, which is quartz and a contact between quartzite and porphyry, has been prosecuted energetically, and at present writing has reached a depth of upwards of 100 feet. The entire shaft, from top to bottom, I understand, has been all good milling ore, without a pound of waste, and, if the prevailing opinion is correct, the Cactus bids fair to rival the famous Fortuna mine near Yuma.

In giving this brief review of our new and promising camp I have confined myself strictly to facts that were of my own knowledge, and disliking to take any risks in writing of that upon which I am not well informed, I shall wait for actual reliable information before attempting any description of the other properties. As there has been comparatively little said of our promising camp in the public press I have assumed that this rambling description will be of some slight interest to the readers of the JOURNAL.

Very Truly Yours,
W. D. STEPHENS.

From the Desert.

GARLOCK, May 15, 1897.—H. C. Lee has bought the Mammoth copper mine at Colorado camp, and is busy putting up a small smelter at the spring with fire clay taken from the coal mine. The Heald coal, which is within a few yards of the spring, will be used in the smelting and the copper ore will be hauled up from the mine, which is less than half a mile from the coal.

This town now has two cyanide plants, both in operation. The experiments so far have been quite successful upon the tailings of the various mills.

It has been discovered that the town of Garlock is two miles south of where it was supposed to have been and that the last government survey, of which stakes remain, is a violent fraud.

The mills are doing very little work at present on account of the ore being a little shy. It is said there is plenty in sight, but the owners are afraid to mill it because attachment suits are almost always run against it for wages, etc.

Water wagons are becoming more in evidence each day as the weather reaches up to

100° in the shade, and many of our good citizens are leaving for the summer to points on the sea coast and in the mountains.

OLD CORRESPONDENT.

Miscellaneous Mining News.

ARIZONA.

The directors of the Prescott Mining Exchange had an interesting business meeting last evening. The attendance was good and the deliberations of a more encouraging nature than those of the last meeting. John Martin and M. G. Burns were present, also J. W. Wilson. Mr. Burns made a very direct and sensible talk on the ore reduction plant proposition. He felt certain that a reduction plant would pay in that vicinity; said there was not an ore condition in Yavapai county but what there was a process to take out the gold from that condition of ore. He said the main point was to get enough citizens interested in the project to carry it ahead. The sense of the meeting was that such works were to be run for the benefit of the country and not as a 2 per cent a month investment. By request, Mr. Burns agreed to appear at the next meeting of the Mining Exchange, in the courthouse, a week from Tuesday, May 11th, when he would state his ideas as to the character of plant needed.

Max Cantin bought the Annie Rooney mine in Walker district, near Phoenix, near the Belle mine, recently, paying \$1,000 for it. This is a good looking prospect.

The tailings of the old Vulture mine, for a long time one of the standard ore producing camps in the territory, and which has lately passed into the hands of new owners, are to be treated by the cyanide process, for which a 100 ton plant will soon be erected. Parties who are well acquainted with the character of these tailings, of which there is a vast amount, say the working of them cannot fail to net the owners from \$75,000 to \$80,000.

Work on the mill is progressing rapidly and it will not be long before Pearce will be turning out silver bullion in large quantities.

The Banner mine in the Sierritas district, which was bonded recently by Bethune & Satterwhite, is showing up fine. They are working two shifts a day and are in a fair way to have one of the best mines in the territory. They have a large body of ore which is increasing in volume the further they go into it.

G. B. Hallsten, who owns the Alabama and Tennessee mines in the Papago mining district, was in Tucson last week. He has recently bonded the Tennessee to a Kentucky company who are working two shafts a day, and the mine is showing up some fine ore. The returns from the smelter show 20 per cent. copper, with a large percentage of silver and lead also. The croppings are very large.

Changes that will more than double the output of the Detroit Copper company are to be made at once, and the management of the camp is to be remodeled upon the plan of Bisbee, which is recognized as the best governed camp in the southwest, as Morenci has been notorious for the opposite condition. At present water for the smelters must be pumped, with more than 1500 feet of lift, and

there are many difficulties attending transportation to and from the mines over a twenty inch gauge railroad and steep surface inclines owned by the Arizona Copper company, at Clifton, whose mines adjoin those of the Detroit company. It is understood that these difficulties will be overcome by the construction of a gravity and electric railway down the mountain from the mine, a distance of twelve miles, to the San Francisco river, on the line of the Arizona & New Mexico railway. Sulphuric acid leachers will then be erected for the treatment of the rebellious ores.

Robert Downes and John Burke of Huachuca have recently bonded their mine to eastern capitalists for a nice little sum. The mine is showing up well and gives every assurance of becoming a valuable property.

The new Empire smelter at Crittenden was blown in and was run one day last week, in which twenty-seven tons of ore were smelted, from which was realized \$103 to the ton in gold. This ore came from the Hardshell and Flux mines which are owned by the company.

The Minnehaha strike in Yavapai county continues to hold out. The strike was made on a ledge on patented ground in the vicinity of the Fortuna mill. The claim has been sold to Messrs. Rily, Swasey & Orton and they will use the old Fortuna mill to work it on a large scale.

The Gladiator mill and mine, near Prescott, are running twenty men and shipping bullion with accustomed regularity.

Joe Kormberc of Pearce, Arizona, who is now prospecting in the Harqua Hala region, has made a good gold discovery in the Big Harqua Hala mountains. The vein he states measures six or seven feet in thickness and can be traced 3,000 feet. The ore shows free gold and horns well.

A party of stockholders of the Franco-American Mining company, situated at Oro Blanco, are expected to arrive at the property from the east soon to look into the affairs of the company and straighten out matters preparatory to putting a large force of men at work. The mine has been idle for some time.

Dr. W. H. White, of Silver City, N. M., went to his new gold discovery, near Clifton, the fore part of this month. The vein is from 10 to 30 feet in width and prospects well in gold across the entire width of the vein. Work upon the mine is at present confined to rich body of ore, which is from fifteen inches to two feet in width. The ore is sufficiently rich to bear cost of transportation and smelting charges and leave a good profit to the owners above wages for mining. A car load lot is now sacked ready for shipment and will be sent to the Silver City Reduction Works.

Globe will be seriously affected by the temporary shut-down of the Old Dominion Copper company. There are upwards of 250 men employed by the several mining companies operating in this district, and active development work is going on in every part of the district on claims owned by individuals. The United Globe mines are purchasing all the good copper ores offered, and this has greatly stimulated prospecting and development,

The Prescott Courier prints this interesting news concerning mining operations in the northern part of the territory: P. C. Clark of the Boaz Mining company is in town. He reports sixteen men at work in the Minnehaha and Bismuth claims, upon each of which 500 feet is to be sunk. The Minnehaha has a double compartment shaft, the Bismuth a single. Mr. Clark says he has taken \$400 gold rock from the mines. Jim York is superintendent. About fifty men are at work in the Fiat. Shackelford & Marsh have just finished sawing 30,000 feet of lumber for the company. Lumber is for boarding houses, bunk houses, etc. A cyanide plant is to be put in to work over 400 tons of tailings from the old Fortuna mine. Men are now at work erecting this plant. Mr. Kiley is running the Boaz mill. The Fortuna mill will start up in a few days. Mr. Clark and David Art own the Los Arnona mine, Bull Run gulch, two miles south of Minnehaha, on the Ora Bella road, in which there is an 151-foot tunnel. They started to sink but had to quit at a depth of forty feet, on account of water. They are now sinking higher up and working a vein which runs from two to three feet wide which will run an average of \$50 in gold. A deal for this property is now about to be made with eastern capitalists, who will work it on a large scale.

The Peabody Mine.

An enterprise which may result in great benefit to the mining interests of Cochise county is now under way in Russellville district. The old Peabody mine, which belongs to W. D. Hubbard of Hartford, Ct., and which has in the past been a large producer, was some months ago bonded to Messrs. Fiege and Joerss and since rebonded by them to a Philadelphia and English company, whose expert is H. Van F. Furman. The company has purchased and removed to the mine the diamond drill of the Sterling Silver company of Tombstone and will thoroughly exploit portions of the Peabody ground which have never yet been opened up. Operations will be under the direction of an experienced mining man and the disclosure of new ore bodies is confidentially expected. The mine has been worked under lease for several years by Messrs. Wien and Mitchell and regular shipments have been made to a reduction plant in New Jersey. Only the richest ore could be shipped, and as a consequence there is at least 5,000 tons of low grade ore now on the dump.

It is announced that if the presence of new ore bodies is discovered by the diamond drill, a smelting plant will be erected at or near Cochise station, in which event mining in the Dragoon district will receive a powerful impetus. The low grade product of the Peabody mine is said to be valuable fluxing ore.—*Phoenix Republican*.

Among the gold properties in Arivaca district, in Pima county, are the Oro Fino group of nine mines, two and one-half miles south of Arivaca. The Longrane's main shaft is 110 feet deep, with open cuts and two other shafts. The Savage has a shaft fifty feet deep. The Oro Fino's main shaft is 120 feet deep, with a tunnel run in 300 feet. Several small cuts and shafts are also in the ledge. The extension of the Oro Fino has a 200-foot tunnel and three ten-foot shafts. The other claims have several hundred feet of work on the ledges. This group of mines belongs to Salvador Pignataro.

Hon. Thos. F. Weedin is putting up machinery on his Arcade group of mines, in the Tortillitas, and before many weeks will be making regular shipments of concentrates. The machinery consists of a 10-horse power Weber gas engine, a concentrating mill capable of working a ton of ore an hour, a Blake crusher, and a Hartz jig sizer. Twenty tons of ore will be reduced to one and shipped. The Arcade mine, at a depth of 125 feet, has a 4-foot vein of ore which assays 560 ounces to the ton.

There is a great excitement over an immensely rich strike on the lower levels of the Tres Amigos gold mines at Oro Blanco. In a large body of high grade ore there is a 2-foot-streak of ore which yields over a dollar a pound.

It is rumored that the Commonwealth Mining and Milling Company lately refused an offer of \$8,000,000 for the Pearce mine. It is claimed that there is in sight in the mine \$32,000,000 worth of ore.

CALIFORNIA.

INYO COUNTY.

A Big Deal Near Panamint.

The mining outlook in far southeastern Inyo is as encouraging as ever, and favorable opinions seem to be justified by solid facts. L. F. J. Wrinkle went north last week for the purpose of purchasing the Confidence and Mendocino mines, located in the Funeral range, northeast of Panamint. The present owners are offered, for the two, \$100,000, a guarantee that \$100,000 worth of work will be done, and one-fifth of non-assessable capital stock. Ashdown and Cole, the original discoverers, drifted down from one of the Nevada towns, and after locating the two mines consolidated them. Ashdown sold his half interest for \$7,000, while Cole was fortunate enough to get \$29,000. The figures now offered, considering the isolated location of the property, indicate that a bonanza is believed to exist there.—*Inyo Register*.

Cyaniding machinery to the amount of 26,000 pounds, for use at Mammoth, arrived at Bishop station a few days ago.

KERN COUNTY.

The Garlock Cyanide company, a new custom cyanide plant located near the town of Garlock, started up last week on the tailings from the McKiernan's mill.

Si Drouillard and Wm. Borgwardt have signed an agreement to sell to T. P. Bawden for \$4000 all their interests in the Sequoia and Sequoia No. 2 copper mines. The agreement is not to be binding until Bawden pays the money over. These claims are good ones and are located about thirty miles east of the Sequoia lumber mills in the mountains east of Visalia.

The Los Angeles Gold Mining company have opened up new bodies of ore and will put in ten more stamps to their Mammoth mill near Keysville. They will also erect a tramway from the mines to the mill and will soon put in new ore bins.

The new machinery has been placed and more men are being put on at French gulch in the Keysville district.

John Farnell is opening the Rip Van Winkle mine and says he has the best mine in the Keysville district.

P. Reddy, J. C. Campbell and W. H. Metson have given notice to the world that the partnership heretofore existing between themselves and the Singleton-Moor-Burcham interests in and to the Rand group of mines, near Randsburg, has been dissolved and no such partnership now exists.

The Colorado Gold Mining and Development company are sacking rich ore in the Three Chimneys mine at Keysville preparatory to milling. A new and rich ledge was struck during the past week.

C. M. Root has sold the Gilliam mine, in the Keysville district, to San Francisco parties and has a force of men at work taking out ore and is hauling it to the Tibbetts mill.

The old Sumner five-stamp mill has been sold to Ed Mills and is being taken to the Glen Olive mine, also of the Keysville district, where it will soon be crushing ore.—*Kern County Echo*.

The shaft of the Wedge mine has reached a depth of 230 feet. The ledge at this point is 80 feet wide, and the ore has steadily gained in value as the shaft has been lowered and is now worth \$160 a ton. Mr. Rogers states that the shaft will be sunk as rapidly as possible to a depth of 415 feet, the capacity of their present hoisting apparatus. This will certainly settle, once for all, the dispute concerning the stability of the ledges in this section.—*Randsburg Miner*.

The new ten stamp mill of the Visalia Mining and Milling Company at Garlock, Cal., made several very satisfactory trial runs.

MADERA COUNTY.

The Madera county miners are excited, says the *Fresno Republican*, over a rich strike made in Wagner's mine, which is situated about eight miles above Raymond and the same distance from the old mining camp and station known as Coarse Gold. The reports which have reached this city are based on reliable authority, and they indicate that a wonderful deposit of the yellow metal has been found. As yet the mine has been worked only on a small scale, and there are good reasons to expect that when more extensive work is done the mine will develop into a real bonanza.

Mr. Wagner first began striking gold in his crude shaft about the first of March, and up to April 1st he extracted in the neighborhood of \$21,000 worth of highly productive ore. On April 1st he sold the mine for \$11,000 to Shaw Bros. of Raymond. They have great faith in the future of their property, and those who have investigated the mine give the new owners every encouragement by expressions of highly favorable opinions.

The precious metal exists in the form known as wire gold, and is of unusual purity, the rock abounds with it and it is easily worked out. Wagner picked his fortune out with a hammer, after having struck the ledge.

One ton of ore was run through an arastras, and it yielded \$2,000 in gold. The ore is considered too valuable to be staked in the usual manner on the "dump," and it is sacked and stored in a building, where it will be kept until worked in a mill, which Shaw Bros. will erect.

The old miners in the neighborhood of the new bonanza are very enthusiastic over it, and

all those who own claims in the vicinity are digging for the continuation of the wonderful ledge. Mr. Wagner, whom fortune has smiled upon so favorably, has resided at the place with his family for the past 20 years, and prospecting with poor success all that time. He is now about 50 years of age, and he and his family have already been enjoying their wealth. They have bought a complete set of furniture for their mountain home, a new \$400 piano, and provided themselves with other comforts that wealth can afford.

RIVERSIDE COUNTY.

The ten-stamp mill, being erected by the English Company who own the Gavilan grant, is nearing completion. The property is under the management of H. B. Vercoe, who, when he took charge of the property, closed the Temescal tin mines (owned by the Company) on account of the tin being an inferior grade, and began prospecting for gold—locating and developing over a dozen claims, in which the free milling ore runs from \$20 to \$100 per ton. As this company has ample capital behind it, the result will, doubtless, be a systematic development of these mines.

Much interest is felt at Leon, in Riverside county, over the mine which is being developed about eight miles east of there. The mine, the Utica, is the property of C. H. Briggs and Wm. Tolle, of Leon, Lon Martin, of Riverside, and Chas. Loomis. A very large body of ore has been tested by the cyanide process and works perfectly. There is also water on the property. They are now running a cross tunnel on the vein, cross-cutting the ledge at a depth of 200 feet. Already much over twenty-five feet has been cross-cut, and there is no sign of getting through the ledge. The ledge crops over some 2000 feet and can be tapped with a tunnel at a depth of 500 feet.—*Riverside Enterprise*.

SAN DIEGO COUNTY.

The Helvetia gold mine, in the Julian district, owned by W. H. Holcomb and others, has been bonded for \$40,000 to a party of Denver capitalists. There is being driven a 1200 foot tunnel to tap a ledge 700 feet below the surface.

TOULUMNE COUNTY.

The main shaft in the famous Rawhide mine is down now nearly 1100 feet, with sinking steadily going on. The principal portion of the ore sent up for reduction comes from the stopes between the 1000 and 900 and 900 and 800-foot levels. A big force are drifting north on the 800-foot level. The vein at all points is big and rich. In the line of improvements, we may mention that a large changing room and new assay office are in course of erection. Nor has Captain Nevills forgotten his men, but has just had completed an immense cellar in which will be constantly kept about two tons of ice, to keep everything fresh and cool for the boarding house. The company contemplate putting up at once either a hundred ton concentrating plant or a cyanide outfit of the same capacity. It has not yet been decided which will be adopted, but with the idea of proving which of the two methods of treatment is the better, experiments are being made at the mine and also at San Francisco by chemist Price.

The old Riverside mine, four miles above Italian Bar, on the Stanislaus, has been bonded to a syndicate, who propose to commence active operations immediately. The developments consist of a few surface cuts, and a tunnel on the vein run in for 600 feet. Assays of rock in the face of the drift are reported to have given very good returns.

The Gray Eagle, at American Camp, will soon be running in full blast. A six-foot vein in true metallic slate has been uncovered that went by mill test \$60 per ton.

The Royal mine, at Experimental Gulch, has a small force of men at work and, from developments, is proving a good proposition. With a strong five feet of free milling quartz, it certainly looks like a good place in which to dig.

The Sunset will shortly be reopened by owners Dolph Davis and T. T. Lane. The property is an extension of the Riverside. At one time there was a good mill on the mine, but this was burned down a few years ago. A new one will be dropping stamps just as soon as the outlook justifies the outlay.—*Sonora Union-Democrat*.

A \$40,000 Mining Deal.

The Omega gravel mine, owned by C. W. Ayers and S. S. Bradford, has been sold to the Scotch syndicate who own the Jumper mine for \$40,000, of which \$10,000 has already been paid, and the remainder will be forthcoming shortly. The property is situated on Table Mountain, between the Alabama and Rawhide. Operations on an extensive scale will be commenced at once.

Work on the Sunset mine near Sonora has been resumed. The machinery is now on the ground and lumber, which has been a scarce article, will be supplied as soon as possible.

The Golden Rule has struck a vein of very rich ore.

The Dutch mine's crosscut, on the 300 level, shows up a vein with 18 feet of pay ore.

The Rosedale gravel mine, near Jamestown, has been sold to George Deeney and Melvin Price.

The Queen mine, at Stent, is being actively worked by a San Francisco Company, which has bonded the property.

The Alameda mine is actively sinking in its main shaft, and has encountered some very rich ore during the past week.

The Providence mine, on the North Fork of the Tuolumne river, has struck an eight-foot vein which shows up well in free gold.

The mill at the Norwegian mine is nearing completion and will shortly be put to work crushing the fine body of ore now being taken out.

The Columbus mine in the Cherokee district is drifting on the 200 level, under the superintendency of J. E. Summers. Good ore has been encountered.

The five-stamp mill at the Pena Blanco mine is to be taken down shortly and erected on Mormon creek. It is to be replaced by a much larger one, which is now an absolute necessity to properly work the massive body of ore awaiting treatment.

The Rappahannock has its shaft down 630 feet, and has started a station on the 600-level. Mr. Chute proposes to sink a thousand feet and will put up a mill this summer,

The ore bodies are proving most flattering. A contract has been let for 400 or 500 cords of wood at \$5 a cord, and he will thus obviate any danger of a lack of fuel next winter.

—*Toulumne Independent*.

COLORADO.

(Extracts from the Mining Investor.)
Idaho Springs.

The Miller tunnel was a cross-cut driven to reach a group of parallel lodes lying within a distance of 750 feet. It pierced them and without proving the lodes to any extent work was stopped and the group has lain idle for about four years until a few weeks ago, when a Pennsylvania company was organized for buying the group for \$60,000. R. S. Bailoy, J. A. Bickford and Colonel Fred are among the representatives now here in charge of the work. They find about 2200 feet in drifting on the nine lodes, some of which are exceptionally strong bodies of mineral. The drifts have been cleaned out and retimbered and in the small amount of drifting the new company has begun to fill the plats with mill dirt and smelting ore. The former shows values ranging from \$3.84 to \$12 per ton, the average being \$10, and the smelting at from \$50 to \$71 per ton, with an average of \$58. A force of men has been placed at work and will be increased to about 50 miners underground. Air compressors for power drills will be put in with a full complement of machinery. A mill will also be erected for the treatment of the milling ores, a member of the firm of Hendrie & Bolthoff having been at the mine this week figuring on the plans for a 25-ton capacity mill to be built and ready for an increase to 50 tons capacity without much additional expense. As soon as the compressors are installed the tunnel will be driven further into the hill in the hope of finding more blind leads. Several new buildings are now in course of erection.

Loy & Straub are driving a cross-cut to reach the Sullivan lode, on the west side of the Chicago mountain. It is silver bearing and from the shaft at 150 feet the returns show 200 ounces of silver per ton and two ounces gold.

Redding & Co. from the Freeland Extension mine are shipping 100 of ore which is netting them \$40 per ton.

A number of Denver gentlemen, of whom Jones & Jones, the assayers, are at the head, are driving the Sears tunnel on Chicago creek to reach their own group of claims in addition to furnishing drainage and transportation to a number of other properties on the Alps mountain. The tunnel has been under way but a short time, it having been driven 160 feet, and will cut its first known lode in another 80 feet.

Central City.

Denver parties are expected to operate the Air-Line property, in Russell gulch, at an early date. This well known property was a good producer in the early days, some very rich free gold having been taken out.

The new shaft house on the Big Spring lode is completed, and the new machinery is now in place, so that active operations can be commenced immediately. This property is owned by an English company, and the intention is to sink at least 200 feet further, believing they will open up the mine in good shape when additional depth is gained.

Leasers who are working in the Washington Extension mine, in Lower Lake district, are taking out some fair grade mill ore, their smelting ore running from \$50 to \$63 per ton. This ore is being taken from the 160-foot level.

Sinking operations have been resumed at the U. S. mine, on Lawrence street, with three eight-hour shifts, the contract calling for another lift of 100 feet, which, when finished, will make the shaft 400 feet deep.

The new shaft house on the Prompt Pay, in Russell gulch, is in course of erection, and will be finished during the coming week, when the machinery will be put up and active work started at as early a date as possible.

Eastern parties who are operating a large property in Russell gulch, are reported to be intending starting up the Leavenworth mine, in Leavenworth gulch, at an early date.

Empire.

The somewhat extensive work done on the Cleopatra mine is now bearing fruit in the shape of a good grade iron pyrites, carrying \$90 per ton in gold and silver. The property is operated under lease and bond by Dr. J. B. Thompson, of Denver, with its owner, P. Schnar, as manager. Two adits of 100 and 250 feet respectively have been run upon the Cleopatra proper, and one of 275 feet upon the Little Jonny adjoining, whence the main lode has been tapped by a short cross-cut at a depth of 130 feet. At this point the crevice is four feet between walls and shows a foot streak of solid ore, with a \$15 concentrating material filling the balance of the space. The force will now be increased and steady shipments maintained during the open season.

Trinidad.

The Colorado Tunnel company, the proprietors of some 60 acres of mining land, embracing the Hillside, Denmak No. 2, Bimetallic and Gold Coin Nos. 1, 2 and 3, have done much development work. On every claim there are well-defined leads. Pay rock was found from the grass roots. A tunnel is now in over 300 feet, which cuts three veins.

The Fox-Edison group, just sold for \$25,000, is considered one of the best properties in the district. About 1000 feet of tunnels have been opened on these mines, and the vein is being proven never failing. Its average width is four feet, and the average value of the ore is \$30, although occasional streaks have been found that assay as high as \$3,000. At present a considerable body of ore, running \$275 to the ton, is being taken out. Over 2500 tons of ore from this group is at present stored in bins, while a large amount of milling ore is on the dump.

The Victor and Oro claims, lying a half mile west of La Belle, contain about 15 acres of good ground. A patent has been applied for. The average assays from the Oro run \$10 to the ton. A 60-foot shaft has been sunk.

Ward.

In the Rag Tag, on the north side of camp, big ore is reported, though, owing to an unusual inflow of water, work is for the time suspended. A fund of \$5,000 has been secured for this prospect, and a power hoist and shaft house will be placed at once.

Rumor still has it that the west end of the Columbia lead, including the Teller, Madelain and Ni Wot, are about to pass into the hands of a powerful syndicate. A quarter of

a million is to be involved in the transaction, and the men who are backing the enterprise are already heavily interested in the camp. Should the old Ni Wot mine—a mine that has a record of gold production exceeding a \$1,000,000—again resume work, Ward will add ten-fold to its present strength and production.

The Ward-Rose is just now the rosiest thing in the camp. For the depth and development attained, the Ward-Rose beats all records ever made in the district. The shaft is but 65 feet deep. From this they have taken a quantity of 15-ounce ore (200), and have made several small shipments of ore that returned \$170 to \$200. In running a level 32 feet, they took out \$1400 worth of ore—\$43 a foot. The mine thus far has paid all expenses of development and seems destined to become a bonanza. It is owned and operated by the Dowd boys and Davis—all poor men.

Cripple Creek Notes.

A shipment of one and a half tons of high grade sacked ore has been made from the Metz and Armstrong lease on the Hillside, on Womack hill. The ore has been saved from a rich streak in the vein which the lessees have been drifting on for some time. It is thought the ore will average fully \$1 per pound.

Returns from ore shipped last week from the Vandenburg lease on the Jack Pot gave a value of \$97 per ton. Another shipment will be sent out in a few days. There are eighteen sets of lessees in all working on the properties of the Jack Pot Company.

For the past two months the Elkton Consolidated has had an output of \$5,000 per month, fifty per cent. of which is profit. The fourth or 400-foot level at the Elkton shaft has been driven through the Elkton and the Katherine claims and is now in the Walter ground a distance of seventy-five feet. The south drift at the same level has been driven 200 feet, but has not found much ore. The number of men employed is ninety.

Thirty pounds of dirt was washed from the Jennings Brothers' find on the Chat. Two pannings were made from this amount of the auriferous soil and the little particles of the yellow metal were taken by Mr. Jennings to an assayer, who moulded it into a gold button, which is of pure, solid stuff and as large as the face of an ordinary collar button and estimated to contain from \$1.50 to \$2 worth of gold.

The new pumping plant on the C. O. D. is now in place at a depth of 500 feet. There are three pumps in place, which will handle 2,500 gallons of water per minute. The station is arrow shaped and the management is expecting great things within a short time. A cross-cut from the shaft to the vein will be started in a few days. The work has been done under the management of Mr. C. E. Palmer, the well known mining and pump man of Colorado Springs.

Mr. R. M. Maloney is keeping up production at the Orphan Bell, where he made a sensational strike some weeks ago. Last week he sent out 100 tons of ore and expects to keep this rate up. The stuff went to the Cripple Creek sampler. The shaft is being continued down. It is now forty feet below the 300-foot level. A new station will be cut at the 450-foot level and the indications are that a larger ore chute which will be found

when that depth is reached. The level has been driven 315 feet all in ore with the exception of the ninety feet in the south drift. This drift still has 170 feet to go before it reaches the Buena Vista side line and it will be opened for the full length.—*Mining Record.*

LOWER CALIFORNIA.

Sale of the Moctezuma Mine.

The Moctezuma mine in the Alamo has been sold by Messrs. W. E. Howard and P. L. Griffin to Mr. F. M. Bradshaw and Chicago associates. The transfer of the property was made Friday, May 7th. The purchase price is not stated. The owners have recently driven through a dyke, and there is now a well-defined ledge of good ore. The shaft has a depth of about 125 feet, and the property is considered one of the most promising in that district. Mr. Bradshaw will continue to work the mine in conjunction with the Aurora in the same camp, and the Wiswall mill on the property will have started up Saturday morning, May 8th.

Mr. Bradshaw and his associates in Chicago are entering into mining quite extensively on this peninsula. They have a large force of men employed on the Aurora mine, which they recently acquired, and the five-stamp mill is in constant operation. With their new acquisition they will more than double their milling capacity, and they have enough ore in sight for the steady employment of both mills.—*Lower Californian.*

MEXICO.

Sonora Notes.

Last week the Planchas Mining Company shipped 300 pounds of silver bullion.

Senor Enrique Ronstadt, of Magdalena, has recently denounced a mining property ten or twelve leagues from Magdalena—a new discovery rich in copper.

A number of Bisbee miners are outfitting a prospecting party to go into the Yaqui river country, now opened by the recently negotiated peace with the Yaqui Indians.

It is rumored that the Don Ignacio ground, adjoining La Colorado mine (at Prietas) has been sold by La Compania Union Minera to a syndicate of Chicago capitalists.

In his copper mine, some thirty miles from Ortiz station, P. B. Chisem has the shaft now down eighty-three feet and has commenced cross-cutting. Already ten feet of high grade ore have been developed, and more coming.

Near Bacoache, the Cerro del Oro Company have some 300 men employed, and have recently discovered new and very rich ledges upon their properties. All the lumber, supplies and machinery necessary are upon the ground, and construction work upon the mill will be pushed with all vigor. Large reserves of ore have been developed and when the mill starts it will be for a long and prosperous run.

One mile from El Tiro mine, in the Cienega country, is another property called La Yaqui, on which a New Orleans syndicate, headed by General Miller, a prominent Louisiana capitalist, has secured sixty days' bond; and Mr. Whittaker, representing the company, is now on the ground arranging to put up a whip, to draw the water, and to put it in shape for a whim which has been ordered. Mr. C. H. Gibson, superintendent for the

Gold and Silver recovery Company, at Cerro, Colorado, has received orders to have his company handle the Yaqui for the new syndicate.

(Extracts from Mexican Trader.)

Chihuahua.

Mr. Andrew J. Stewart, of Pennsylvania, states that there are two big mines, the Sabanal and Corralitos, which produce not less than \$1,500,000 a year each. Both properties employ about 2500 men and ship about 200 tons per day, which averages over \$50 per ton. Mr. Stewart claims, and with reason, that the opportunities in that state were never better than at present. The same thing may be justly said of some half dozen other Mexican states.

Sonora.

We have repeatedly called attention to the state of Sonora as a promising field. We now learn that J. E. Sturzenegger, representing the South African—Australian Mining company, has just visited some of the rich gold districts in this state and has recommended his company to invest \$20,000,000 there in mines. Then the British Gold Mining company of London has just purchased a mining zone in the Arizpe districts, the purchase price being \$1,500,000, gold. Furthermore, a syndicate of New York and Boston capitalists has recently paid \$4,000,000 for a group of mines in the Copalguin districts. This is not all. Through the effort of the Hon. Brewster Cameron, who was in Mexico some months ago and will shortly be there again, a London syndicate, known as the Campana Consolidated Gold Mines Limited, has invested some \$1,000,000 gold in the Altar district.

Durango.

It is stated that the Avino mine has been purchased by a St. Louis, Mo., company and that the new owners propose to invest upwards of \$400,000 in developing the property.

Chiapas.

During March the concentrating mill of Chiapas Mining company ran twenty-one days, crushing 1,850 tons of ore, yielding twenty-two tons of concentrates. The stamp mill ran eighteen days, stamping 1,450 tons of tailings, yielding 176 ounces of gold. The stoppage was mainly due to want of water.

Zacatecas.

There is quite a boom in this district, in fact, there are no miners at present unemployed. The Quebradilla company is employing large numbers in new exploratory work.

The San Luis del Oro has let the contract to the Industrial company of Chihuahua for a twenty-stamp mill, with plates and eight concentrators, two standard boilers and a 150 h. p. Corless engine, a complete electric light plant for the mines and reduction works, and a larger pumping plant for the mines. The mines are well developed and have large ore bodies in sight, besides some 1,500 tons on the dump.

The Central company, under the able management of Mr. Gardner, has erected a fine plant, consisting of two Bryan mills with plates and eight Union concentrators, one standard boiler and a Wheelock engine. Their mines are well developed and show large ore bodies.

A big high and low pressure Reidler pump is being put in on the 1000 foot level of the Creston mine at La Colorado.

It has just leaked out that Messrs. Vicente Lombardo and Antonio Ferrer, of Tezuitlan, in the state of Puebla, closed a deal a few days since with the Guggenheims for the transfer of part of their lead mine, which is situated six miles toward the coast from the above-named point. It is asserted that the controlling interest is in possession of the Guggenheims. The transaction was affected by their agent, Mr. Geo. D. Barron. The property will be operated in the future under the name of the Compania Beneficiadora de Metales Auriferos de Tezuitlan.

NEVADA.

Herman Zadig, the mining expert of San Francisco, recently visited the Buckeye placers and he says he believes that the finding of the river channel is the most important mining event in this country for years. He has in all his experience, never seen so much gold in a given space in the ground. One pan turned out \$125 in nuggets and in places it runs \$30 to the cubic yard. In California 15 cents to the cubic yard makes a mining excitement. He thinks that the millions of gold this placer will produce, will startle the world with its productiveness and add millions to the wealth of Nevada. Why such a property has been unsold so long astonishes him.

An important strike was made in the Con Virginia last week in the shape of five feet of \$500 rock. Good assays are also being taken from the Brunswick, in Virginia City.

The White Pine Boom.

From a private letter we learn that White Pine county is on the eve of a boom which promises to equal in extent the famous White Pine excitement of 1868, but with the difference that this time everything points to a permanent and substantial prosperity.

Our correspondent says that business in and around Ely and Cherry Creek is picking up in good shape as a result of mining operations, which have been practically at a standstill for years, on account of litigation and waiting for the price of silver to go up. Now agreements have been reached by which capitalists have taken hold of the closed down properties and are investing money unstintedly, with every indication of profitable returns.

The Star and Gray Eagle properties at Cherry Creek are being improved extensively. Pump and hoisting works are being erected and a concentrator will go up soon. The pump is now at Toano awaiting transportation to Cherry Creek. When set up it will be the largest in operation in the state, having a capacity of 3000 gallons a minute.

The managers of this mine say that the road between Toano and the "Old Star" mine won't have any grass in the middle of it from now on. The Star has been and still is one of the best silver mines in the state. The superintendent is Joe Farren, a thorough mining man.

The Newton Dunvan mine of Kinsley has about 1200 sacks of low grade ore out for shipment, and should the returns meet with their expectations the owners will continue extracting ore for shipment, have a practically unlimited quantity in sight in their mine.

A five stamp mill is to be put up shortly at the Ben Hur gold mine, 25 miles from Cherry Creek.

The Chainman mine at Ely will have a good sized mill soon. Bids are now out for hauling 132,000 feet of lumber. If present intentions are carried out, an electric light and power plant will be erected and operated in connection with the mine and mill. These extensive improvements indicate a general business revival for that section, something which hasn't been in evidence for years.

The owners of the Adelaide copper mine, at Golconda, in Humboldt county, are looking for a site to build a smelter on, in the neighborhood of Golconda, with which they intend to work their valuable copper ores. It is also reported that they will erect a mill for the working of customer ores. The company is composed of Salt Lake people, and has plenty of capital and means business.

Some rich strikes have recently been reported from Wadsworth in Washo county.

There will be a five-stamp mill erected on the property owned by Robert Denio and J. W. Cowden in the Denis district, near Winnemucca, in Humboldt county.

Silver Peak Notes.

The tunnel started a month ago by Mr. John Chiatovich is progressing rapidly and is in good ore. The pay streak is six feet wide and will work between \$30 and \$40, where they raised up on it from the tunnel level. The north drift is in 20 feet in good quartz, the south drift about 15 feet, and the whole ledge indicates strength and permanence. In a week or ten days the ground will be opened, so that stoping on the ore will commence, when a few men can keep the ten stamp mill running.

The owners of mines in the White Mountains, above Fish Lake valley, are to begin work as soon as the snow goes off. There are some fine mines there of lead, silver and gold. In fact, the gold is what they rely on for profit.

Louis Leidy's Great Gulch mine improves as he gets deeper and is one of the most promising prospects in the district. It is a new find in a new field, and shows the great extent of this mineral belt.

The miners of lower Tule Canyon are doing well. There is too much snow at the upper end for them to work the placer mines.

Sam Case is extracting good ore from the Homestake.

Fred Vollmer is repairing his little mill and will start up shortly.

Joe Lang is prospecting his mines and they look well.

The Valcalda brothers are running the O'Hale mill on ore from their mines and are doing well.—*Hawthorne Bulletin*.

It is reported that the London Exploration company has secured an option on the great De Lamar mine at De Lamar, Nevada, and that within a few days that property will pass into the hands of that powerful corporation.

NEW MEXICO.

Black Mountain Notes.

More activity prevails in the Black Mountain camp than for a year.

D. Y. Anderson has recently purchased several prospects and has begun work, and has let a 50-foot shaft contract.

Mr. Francis, another old mining man, has consolidated his own with the claims of Messrs. Foss and Humphreys, all on the vein with and between the Sunol and Mormon mines, has let a contract for 300 feet of shaft work; and on the 24th ult. sent to his camp 6500 pounds of laborers' supplies.

Messrs. Niles and O'Leary have an excellent prospect at the foot of Black Mountain. They have sunk a shaft 75 feet and find the vein widening and improving in quality.

Reports coming into Cimarron from the Urraca and Bonito districts, which are nine miles from the above place, show that work has begun in earnest this spring.

The owners of the Elkhorn are running two shifts on their tunnel and will complete it to a distance of 180 feet inside of the next thirty or forty days, they having already done 130 feet.

The "Wm. Jones" tunnel is in sixty feet and is to be entered thirty feet more, where it will intersect a large vein of low grade ore.

A contract has been let for a 200-foot tunnel on the Bonito Camp, the property of Messrs. Clouthier & Abreu, from which some very high assays have been obtained.

Work will commence in a few days on the placers that were opened last fall and a most prosperous season is looked for.

The second carload of machinery for the American mine at Nogal, in Lincoln Co., was sent across the country from San Antonio.

It is reported from a reliable source that the Old Abe mine at White Oaks has started up.

A law just passed by the New Mexico legislature is of a stringent character, making it impossible to do "lead pencil assessments," and this law will result in a good many locations changing hands at nominal prices. Ninety days are allowed in which assessment may be done, and it is a misdemeanor, punishable by fine and imprisonment, to lap new claims on older locations.

A Rich Strike.

On Monday, May 3rd, in a cross-cut on the Gold Standard mine, at Cerrillos, about 17 feet from the surface, a piece of ore 14x11x6 inches was taken out, which surpasses in richness anything before encountered, even in that wonderful mine. The ore weighs about 65 pounds and it is literally filled with gold. The estimated value is about \$2000. The ore from the rich vein in this mine has all been sacked and stored, and the owners estimate the value of ore stored to be from \$1200 to \$2000 a sack.

Output of Hillsboro gold mines for the week ending Thursday, May 6th, 1897, as reported for *The Advocate*:

	Tons
Wicks.....	25
Butler.....	10
Richmond.....	30
Happy Jack.....	5
Snake Group.....	30
Opportunity.....	10
Sherman.....	15
Prosper.....	5
Eighty-five.....	5
Percha (silver-lead).....	10
Total.....	145
Total output since Jan. 1, 1897, —	2,800.

In the face of the main adit level of the Confidence mine at Mogollon, a large body of ore has been encountered which is of higher grade than the ore recently milled. The vein at this point is 12 feet in width, and the ore body over 4 feet wide, and increasing in width with every foot driven. The ore body is compact and gives many indications of being of very great extent. The adit level, in the face of which this ore was struck, is 1500 feet in length, and attains a depth of about 400 feet. For the past 100 feet or more the ore in the adit level has been of low grade, but this new strike demonstrates that the barren intervals are comparatively small between the ore chute.

On the Maud S mine also at Mogollon, a fine body of high grade ore has been struck on the 375 foot level. Another strike has been made on the 150 foot level, and is supposed to be the upper portion of the ore body found below, showing it to be of great extent vertically in the vein, and the indications are that it will be of great lateral extent as well. The ore is of higher average value than anything found heretofore in the mine.

John T. Mitchell, who came from Denver to expert the Tellurium mines at Little Dry creek has secured the option on the property and will commence work immediately. He exhibited a chunk of the ore, weighing 25 pounds, which will run \$6000 per ton in gold.

The Silver City Turquoise Mining Co. has been organized and articles of incorporation filed with the secretary of the territory. At a meeting of the stockholders held in Silver City, Monday, May 3rd, the following named gentlemen were chosen to constitute a board of directors: E. M. Young, E. B. Moorman, secretary; and C. C. Shoemaker, treasurer. The object of the incorporators is to own and operate a lapidary and all other machinery and appliances necessary to carry on mining and to buy and sell real estate, mines and precious stones and metals. The capitalization is \$1,000,000, divided into 100,000 shares of \$10 each. The company has some valuable turquoise mines in the Burro mountains as well as some good copper properties.—*Silver City Enterprise*.

Bland Notes

The Crown Point began a shipment of a carload of ore to the Silver City smelter on Monday May 3rd.

Matt Powers has the contracts to drive 20 feet in each the north and south drifts of the Albemarle in the 60 foot level.

Work on the Yellow Jacket in Colla canyon is progressing well, and that valuable property is showing up under development.

Jack Carpenter and Henry Brown have a continuous contract sinking the shaft on the Pamlico, one of the Albemarle group of mines.

Good reports come from the Sheridan north on the Albemarle lead. A large quantity of high grade ore has been opened up on the big lead.

The Lone Star is working the usual number of men with a day and night shift on the upraise in the second level which lacks about 10 feet of being completed.

Lots of work is being done on the Black Girl and a good deal of fine ore is being piled on the dump, Messrs. Hart and Young, the lessees of the property, being confident of the outlook.

Hon. J. E. Sheridan, editor of the *Silver City Enterprise* is an applicant for the position of territorial mine inspector of New Mexico.

S. P. Mahan, mining expert and manager of the Albemarle group of mines, expects to soon leave for the east, to be absent for ten or twelve days, and during his absence all work on the mine will be done under contract already let.

Martin Hart has finished the assessment work on the Mogul, one of the properties in Coilla canyon. The fine character of quartz shows up well in the lead and would indicate that very little development would be required to make it a paying mine.

The Rising Sun, owned by Messrs Chase, Paxton and Larzelere is at present showing up better than ever before. It is now being worked by the last named who has begun to sink a winze near the end of the 120 foot tunnel and on a four foot vein of slightly decomposed quartz that is well mineralized. Assays made some time ago on Rising Sun rock gave a return of four ounces gold, 40 ounces silver to the ton.

Messrs. E. Beckman and W. B. McPherson, who will have the management of the new Bland mill, arrived May 7th from Los Angeles. The machinery for the necessary changes has been shipped and should have reached here before this, but through a delay in transportation will hardly arrive until sometime next week. In the meantime there is considerable work to be done in the way of preparing for the changes, which will be pushed with vigor and there is every reason to believe will, result in the establishment of a successful milling plant for the treatment of the ores of this district.—*Bland Herald-Weekly*.

UTAH.

Bingham Notes.

Work is progressing satisfactorily on the foundation of the Highland Boy mill.

The H. E. Thomas lease on the Black Hawk (Niagara group) contributed a 34-ton lot to the list of shipments last week.

Manager Dan Clays is negotiating for pumping and hoisting machinery for the Julia Dean mine, and steam power will soon replace the present expensive hand-pump work.

An 18-ton lot of ore was shipped last week from the Brunton lease on the Burning Moscow, the first to come from the head of Carr fork this spring. A number of properties in that locality will soon follow suit.

The Silver Shield, in Porcupine gulch, owned by President Tiernan of the Cunningham Company, and under lease to Amasa Brown, made a 20-ton shipment last week, the first we believe in over a year.

At the Fortune group operations are somewhat retarded by surface water, but 17 men are employed, and manager Hill is fast getting the property in shape for steady production this summer. The main tunnel of the Fortune mine is now within 15 feet of the ore chute.

George Hirsh and partners will soon resume operations on the Rosa, above the Sweden at the Head of Markham gulch. They will develop the Rosa in connection with the Mountain Chief and Joseph, on which they have a bond and lease, and will run a deep tunnel. They are on a strong vein, and as of the Sweden, the ore runs well in gold.—*Bulletin*.

Park City Notes.

Louis Gerard has finished jigging the 100-ton lot of second-class Creole ore, and the concentrates have been shipped to market.

The brace of Gates jiggs, recently purchased by Webber & Kearns, have arrived and were delivered at the Silver King's second-class dump last week.

Monday, May 3d, will have been the Silver King pay-day. In addition to the employees receiving their monthly checks, the sum of \$37,500 will be distributed among the fortunate stockholders.

It is whispered in an undertone that the test run made on Anchor ore with the Ellis concentrator the latter part of last week and the first of this was entirely satisfactory, the results proving even better than expected.

The condition of the Creole road is such that no attempt has as yet been made to haul the new engine and boiler to the mine. Until that shall have been done, Lessee McGrath will make slow progress in developing the property, in the upper workings of which he recently exposed a deposit of high-grade ore.

It leaked out that an important strike was made in the Cumberland about the middle of last week. Details are difficult to procure, but as near as can be learned a five-foot vein of gold-bearing quartz has been cut near the surface, assays on which reveal \$23 in gold and from three to four ounces in silver.

Tuesday, May 4th, was the date set for the annual meeting of the stockholders of the Constellation Mining Company, but in the absence of the requisite number of shares an election of officers was not held. The name of Israel Barlow was added to the list of directors. An assessment (No. 14) of 1½ cents per share was levied on the capital stock of the corporation, payable immediately. Three shifts are now employed in the mine, the new pump having overcome all obstacles to the prosecution of work uninterruptedly.—*Record*.

Tintic Notes.

The Swansea Mining company on Tuesday May 4th, declared its regular monthly dividend of \$5,000 or 5 cents per share. The mine is looking in excellent shape and the usual amount of ore is being sent out.

At a meeting of the board of directors of the West Cable Mining company held in Salt Lake Thursday May 4th, an assessment of one-half cent per share was levied on the capital stock, the purpose of the assessment being the continued prosecutions of the development now in progress. Two shifts are at work on the property.

Joseph Gerber and Jacob Hupfer have sold the Hungarian mine to Frank Knox of the National Bank of the Republic, the purchase price being \$15,000, \$1,000 down and the balance in payments to be completed in a year. The Hungarian joins the Ajax of which Mr. Knox is president, and will undoubtedly be consolidated with that property. It has a good record as a producer, although never worked to any depth.

The lessees of the Cleveland mine at Mammoth commenced work on the property the 1st inst. The work is being done through the Sioux-Ajax tunnel and it is proposed to thoroughly prospect the vein. The Cleveland is a property with most excellent indications for ore, and we believe with proper develop-

ment will make a valuable mine. Its position with respect to other producers is all that could be desired.

William Hatfield, George Sutherland and Henry Peery have taken hold of the Martha Washington mine, in the south end of the district, and will at once proceed to the development of the property. A new whim arrived in Silver City Wednesday May 5th, and we are advised that the cleaning up of the old workings has already commenced. The Martha Washington has a good record as a producer and will undoubtedly develop into one of the good things of the south side.

Articles of incorporation of the Molly Bawn Mining company were filed in Salt Lake the last of April. The capital stock is fixed at \$150,000, divided into shares of \$1 each. The officers and directors are A. C. Hose, president; R. E. Norrell, secretary; H. S. Ellerbeck, treasurer; F. A. Merriman, J. A. Kersh and H. W. Fuller. The company will operate the Molly Bawn and Last Chance claims in the south end of the district, on which they hold a lease and bond.

Shipments from the district for the week are as follows:

From the Bullion-Beck mine 10 carloads ore, from the Bullion-Beck mill 15 carloads concentrates, from the Centennial-Eureka 1 carload ore, from the Uncle Sam 4 carloads ore, from the Mammoth mill 7 carloads concentrates, from the Utah 3 carloads ore, from the Lakeview and Stockton 1 carload ore, from the Swansea 3 carloads ore, from the South Swansea 5 carloads ore, from the North Star 3 carloads ore, from the Black Dragon 1 carload ore, from the Dragon Iron Mine 2 carloads ore daily.—*Tintic Miner*.

GENERAL NEWS

Recent Mining Patents.

Messrs. Townsend Bros., Solicitors of American and Foreign Patents, 9 Downey Block, Los Angeles, California, report the following list of recent patents of interest to mining men:

No. 581,643. April 27, 1897. Amalgamator. W. Wright, New York, assignor to the Electro Manufacturing Co., of West Virginia. A series of water pipes are arranged extending across above an amalgamating plate and each pipe is provided with nozzles formed of carbon; electricity is supplied to the nozzles and to the plate and water is discharged through the nozzles, upon the plate over which the gangue is passed.

No. 581,425. April 27, 1897. Gold Saving Device. Joseph Mait, Oakland, California. The gangue passes from a hopper through a regulating gate to an inclined oscillating screen; riffles are fixed transversely across the screen, each having a short upturned lower edge and having the longest incline directed upwardly along the screen; a fan is arranged below the screen and forces air therethrough to carry away the lighter material.

No. 581,629. April 27, 1897. Machinery for Concentrating Minerals. S. Stutz, Pittsburgh, Penn. This consists of apparatus embodying a conveyer, a classifying screen, a trough, a washing-pan, jiggers, a picking table and chutes and conveyers connecting the various parts with each other.

No. 581,428. April 27, 1897. Ore Washer. C. F. Pike, Philadelphia, Penn. An endless open carrier travels through a wash trough, being supported above the bottom of the trough, and water is directed upon the

ore upon the carrier and passes through the trough both above and below the ore.

No. 581,476. April 27, 1897. Shaft for Stamp Mills. E. A. Blanton, Jr., Wallingford, Penn. The shaft is provided with a series of curved integral wedged-shaped bosses arranged circumferentially around the shaft, and the hub of the cam is provided with wedge-shaped recesses to fit upon the bosses so that the hubs will wedge tightly upon the bosses when turned in one direction, and will loosen when turned in the other direction.

No. 581,910. May 4, 1897. Process of Extracting Copper from Ores. G. W. Goetz, Milwaukee, Wis., by his Executors. The ore is placed in a rotating receptacle and subjected to the action of a solution containing hydro-chloric acid and also to the action of air or oxygen; the solution containing copper salts in suspension is separated from the ore and the salts reduced by metallic iron, to metallic copper.

No. 581,886. May 4, 1897. Gold Saving Apparatus. J. Marshall, Fairfield, California, assignor to the Marshall Gold Saver Co. The gold is discharged from a hopper, upon screens, and a blower carries a portion of the ore between rotating amalgamated rollers.

No. 582,112. May 4, 1897. Miners Tool. J. W. Bray, Aspen, Colorado. The combination of a candle-stick having a channelled lug pivoted thereto, a folding support pivoted in the lug, and a knife-blade integral with the support and adapted to be sheathed within the lug.

No. 581,755. May 4, 1897. Ball Pulverizer. William L. Morris, Cleveland, Ohio, assignor to the Morris Ball Pulverizer Company. This is an improvement in the driving mechanism of the Morris Ball Pulverizer, which is provided with a circular grinding track, balls arranged within the track and a driving ring arranged to bear upon the balls to rotate them.

No. 581,756. May 4, 1897. William L. Morris, Cleveland, Ohio, assignor to the Morris Ball Pulverizer Co. A wedge is interposed between the moving moving jaw of the crusher and the cam which operates the jaw, and the wedge is adjustable to regulate the movement of the jaw.

Copies of these patents may be obtained for 10 cents each by addressing Townsend Bros., or for 5 cents each by addressing the Commissioner of Patents, Washington, D. C.

Mining Claim Act of 1897.

The following is a copy of the new law which is of interest to every mining man locating claims.

An Act prescribing the manner of locating mining claims upon the public domain of the United States, recording notices of location thereof, amending defective locations, and providing for the deposit of district records with County Recorders, and prescribing the effect to be given to recordation of notices of location and affidavits.

[Approved March 27, 1897.]

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SECTION 1. The location of mining claims upon the public domain of the United States shall be made and perfected as provided in this Act.

SEC. 2. The discoverer of any vein or lode shall immediately upon making a discovery, erect at the point of discovery a substantial monument or mound of rocks, and post thereon a preliminary notice which shall contain:

First—The name of the lode or claim;
Second—The name of the locator or locators;

Third—The date of the discovery;

Fourth—The number of linear feet claimed in length along the course of vein each way from the point of discovery;

Fifth—The width claimed on each side of the center of the vein;

Sixth—The general course of the vein or lode as near as may be;

Seventh—That such notice is a first or preliminary notice.

Such notice shall be recorded in the office of the County Recorder of the county in which the same is posted within twenty days after the posting thereof. Upon the erection of said monument and posting such notice, the discoverer shall be allowed the period of time specified in section three of this Act to enable him to perfect his location as hereinafter provided.

SEC. 3. Within sixty days from the date of the discovery of a vein or lode, the discoverer must perform fifty dollars worth of labor in developing his discovery, and distinctly mark his location on the ground so that its boundaries can be readily traced, and must file in the office of the County Recorder of the county in which the claim is situated, a certificate of location, which said certificate shall state:

First—The name of the lode or claim;
Second—The name of the locator or locators;

Third—The date of discovery and posting of the notice, provided for in section two of this Act, which shall be considered as the date of the location;

Fourth—A description of the claim, defining the exterior boundaries as they are marked upon the ground, and such additional description by reference to some natural objects, or permanent monument, as will identify the claim.

Fifth.—A statement that such certificate is the final or completed notice of location, and that he has performed the aforesaid fifty dollars worth of labor in development work thereon within the aforesaid sixty day period, stating generally the nature thereof. Said certificate shall be dated and signed by or on behalf of the locator or locators and verified by them or by some one in their behalf, and when filed for record shall be deemed and considered as prima facie evidence of the facts therein recited. A copy of such certificate of location, certified by the County Recorder, shall be admitted in evidence in all actions or proceedings with the same effect as the original. The performance of such labor shall be deemed a necessary act in completing such location and a part thereof, and no part thereof shall inure to the benefit of any subsequent location.

SEC. 4. The discoverer of placers or other forms of deposit, subject to location and appropriation, under mining laws applicable to placers shall locate his claim in the following manner:

First—He must immediately post in a conspicuous place at the point of discovery thereon a notice or certificate of location thereof containing:

(a) The name of the claim;

(b) The name of the locator or locators;

(c) The date of the discovery and posting of the notice, hereinbefore provided for, which shall be considered as the date of location;

(d) A description of the claim by reference to legal subdivisions of sections, if the location is made in conformity with the public surveys; otherwise, a description with reference to some natural object or permanent

monument as will identify the claim, and where such claim is located by legal subdivisions of the public surveys, such locations shall, notwithstanding that fact, be marked by the locator upon the ground, the same as other locations.

Second—Within thirty days from the date of such discovery he must record such notice or certificate of location in the office of the County Recorder of the county in which such discovery is made, and so distinctly mark his location on the ground that its boundaries can be readily traced.

Third—Within sixty days from the date of the discovery the discoverer shall perform labor upon such location or claim in developing the [] to an amount which shall be equivalent in the aggregate to at least ten dollars' (\$10) worth of such labor for each twenty acres, or fractional part thereof, contained in such location or claim.

A failure to perform such labor within said time, shall cause all rights under such location to be forfeited and the land covered thereby shall at once be open to location by qualified locators other than the preceding locators, but shall not in any event be open to location by such preceding locators, and any labor performed by them thereon shall not inure to the benefit of any subsequent locator thereof.

Fifth—Such locators shall, upon the performance of such labor, file with the Recorder of the county an affidavit, showing such performance, and generally the nature and kind of work so done.

SEC. 5. The affidavit provided for in the last section, and the aforesaid placer notice or certificate of location when filed for record, shall be deemed and considered as prima facie evidence of the facts therein recited. A copy of such certificate, notice, or affidavit, certified by the County Recorder, shall be admitted in evidence in all actions or proceedings with the same effect as the original.

SEC. 6. All locations of quartz or placer formations or deposits, hereafter made, which do not conform to requirements of this Act, in so far as the same are respectively applicable thereto shall be void.

SEC. 7. No record of a mining claim or millsite, made after the passage of this Act, in the records of any mining district, shall be valid. All notices of location of mining claims, millsites and other notices, heretofore recorded in such district records, if such notices conform to the local rules and regulations in force in such district, are hereby declared valid. Within thirty days after the passage of this Act the district recorder or custodian of the records of the several mining districts in this State, shall transmit to the County Recorders of the respective counties wherein the respective districts are situated, all the records of said respective districts, and thenceforward such County Recorder shall be deemed and considered the legal custodian of such records. Thereafter copies of such records, certified by the County Recorder, may be received in evidence with the same effect as the originals.

SEC. 8. This Act shall take effect and be in force sixty days after its passage.

Development work in the Copper King mine is steadily being pushed ahead under the direction of H. Grafton Vercoe. Fifteen men are employed at the mine and the outlook is very bright. These claims are located near Letcher in Fresno county, Cal.

The number of miners engaged in Russian mines exceeds 500,000.

The Mining Laws of the State of California by Frederic Hall, author of Halls Mexican Laws, includes the new laws passed by the Legislature of 1897. It is published by J. Bell of Los Angeles and will be bound in paper.

PERSONAL NEWS ITEMS

J. H. Gyger, of Garlock, Kern County, Cal., has gone to Perris, Riverside County, Cal., for a six weeks' vacation.

W. F. Goodhue, engineer, in charge of the Excelsior company's water system at White Hills, in Mohave County, Arizona, returned the other day from Albuquerque, N. M.

O. E. Lee left Salt Lake, Utah, for the Dexter mine at Tuscarora, Nevada, the first of the week, accompanied by J. Larkis, who is now heavily interested in that gold property.

C. H. Wilbur, a mining man of Salt Lake, Utah, was in Reno, Nevada, May 12th.

C. A. Rice, who is interested in mines in Eldorado canyon, Nevada, was in Kingman, Mohave county, Arizona, last week.

Turman Schneck, of Salt Lake city, left, May 13th, for Mountain Home, Idaho, for the purpose of making an examination of a gold property in that locality.

C. S. Lewis, of San Francisco, was in Bill William's Fork, Arizona, last week, examining some mines.

Wm. McCormick, formerly mill foreman at La Colorado mill, in Sonora, Mexico, is now in California, where he has secured a similar position.

David Murphy, of Denver, and W. H. Randall, of Nogales, Arizona, who were in Tucson last week, examining the Young America mine, in the Silver Bell district, near Tucson, returned home last week.

S. P. Mahan, the mining expert and manager of the Albemarle group of mines, in the Cochiti Mining district, near Bland, N. M., expects soon to leave for the east on a short business trip.

John Rehm, a mining man of Prescott, Arizona, has just left for Telluride, Colorado, where he has secured a good position.

H. C. Bement, of Socorro, N. M., has gone to British Columbia, to invest in mines.

W. Larson, a mining man of San Francisco, Cal., was out in the desert, near Riverside, Cal., where he is interested in some mines, for a few days, last week.

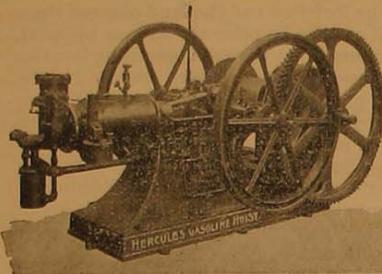
Chas. A. Van Zandt and Edward Zwickey, of Butte, Montana, have gone to Idaho, on an extensive prospecting trip.

F. P. Davis and George Thompson arrived in Gold Creek, Nevada, May 3rd, from Mercur, Utah, in the interest of Utah capitalists.

Capt. Hoatson, of Butte, Montana, recently went to Calumet, Michigan, where he will assist his father, who is the general superintendent of the great Calumet and Hecla properties.

P. N. Cole, president of the Bank of Commerce, of Kansas City, Mo., is now in Arizona, near Prescott, examining some mines, which he may become interested in.

Chas. D. Lane, of the Utica mine, was in Kingman, Arizona, the fore part of May, looking into some propositions from T. L. Ayres, who owns the Eureka mine, one of the richest gold mines in Mohave county.



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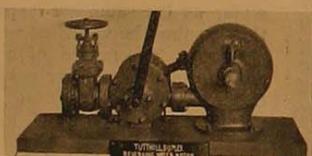
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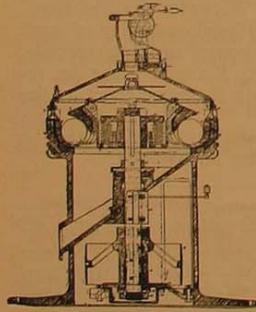
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I. M. Davis, Ike Neibor and James Quirk, of Mercur, Utah, are in Nevada, examining some copper properties on the Salmon river.

Harvey Towner and Jesse Harwood left Farmington, New Mexico, with train of pack burros for the mining region near Telluride, Colorado, where Mr. Towner has a contract for transporting ore over the mountain trail to the mill.

Messrs. D. Harrie and J. Lenox, of Oakland, were in Sonora, Toulumne county, Calif., last week, where they are interested in some general properties.

D. V. Coleman, who has been in charge as mill superintendent of the Golden Giant Mining company, near Silver City, N. M., for several months past, has gone to Dos Cabezas, Arizona, to take charge of a gold mill at that place.

Geo. D. Roberts and Professor Maynard, the well-known mining experts, are examining the Silver Peak mines, in Southern Nye county, Nevada.

William Church, of Denver, Colorado, formerly president of the Detroit Copper Company, at Mori- en, Ariz., is on a tour of inspection of the territory.

John T. Mitchell, the mining expert of Denver, Colo., was in Silver City, N. M., last week. Mr. Mitchell has been examining some tellurium mines on Little Dry creek near Mogollon.

A. Grosse, the Chicago mining man, was in Garlock, Kern county, California, last week, looking after his interest in some mines about two miles from Mesquite Springs.

A. B. Lewis, of Southern California, was in Phoenix, Arizona, May 6th.

Messrs. T. H. Clark and George F. Hoyt, both prominent mining men of Los Angeles are now in Arizona, inspecting a group of copper claims in the Dragoon Mountains, near Tombstone.

R. G. Downey, treasurer of Los Planchas Mining Company recently visited the property of the Company at Prietas, Sonora, Mexico.

R. A. Van Pelt arrived in Salt Lake, Utah, from Gold Creek, Nevada, the first part of May. He has been examining some property in Nevada.

James Barlow-Snodgrass, professor of metallurgy, of Edinburgh, Scotland, who has been traveling in Mexico recently, is now in Huachuca, Arizona.

Wm. Guggenheim, of the Philadelphia Smelting and Refining Company, left Denver, Colorado, last week for Mexico, to look after his mining interests there.

Messrs. Ferron & Stahlman, the Salt Lake capitalists, who are interested in the Adelaide copper mines, at Golconda Nevada, were visiting the mines the fore part of this month.

F. M. Frank, the mining man of Utah, who left Los Angeles last week, is now in Prescott, Arizona.

H. L. Swain, superintendent of Ibarra Mining Company's property, at Calimali, Lower California, returned from San Francisco, May 6th, accompanied by Mr. William Fries, one of the directors of the company. They will proceed to the mines via Guaymas.

Herman Zadig, the mining expert of San Francisco, has recently visited the Buckeye placers, near Carson, Nevada, and seems well pleased with what he saw.

Joseph A. Graham, of Salt Lake City, has just returned from a trip east, where he went on mining business.

Dr. J. M. Taylor, a mining man who has been prospecting in the vicinity of Julian, in San Diego County, Cal., was a visitor at the JOURNAL OFFICE yesterday.

E. W. Johnson, civil engineer for the United Verde copper mines at Jerome, Arizona, and nephew of W. A. Clark, who is interested in the property, was in Tucson the last of this week.

G. Wheatley, the mining man and broker of Tucson, Arizona, has just arrived in Los Angeles, and reports considerable activity in that vicinity.

OBITUARY.

Chas. Monaghan, brother of Frank Monaghan of Needles, Christopher Neilson, Judge J. M. Mortan, John Powers, Blank Conelley, two teamsters in the employ of the Southwest Mining company by the names of Lars, Franzen and Benj. Jones, and three others whose names could not be learned, were murdered by an Indian called Ahvote in the vicinity of El Dorado canyon, in Nevada, this week. Ahvote was afterwards killed by his cousins, one called Steve and the other Pete, who were sent out under threats that if they did not kill him the whites would exterminate the whole band of renegades.

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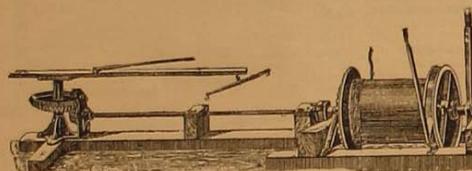
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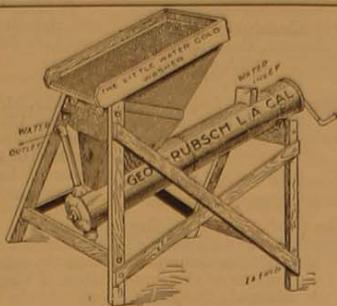
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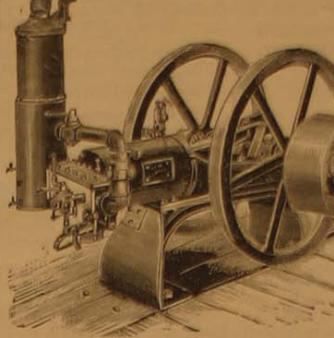
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We guarantee our Engines to work perfectly on California Crude Oil, or Distillate, or any other kind of gaseous Oil; we however prefer CALIFORNIA CRUDE OIL, from Coalings, Fresno county, for the reason that gas from Crude Oil will produce more power from the number of feet of gas used than from any other Oil and it is also a natural lubricant as well, the valves being always lubricated sufficiently to prevent them from sticking, thus assuring greater durability of the working parts than it otherwise would be in using dry gas. Another advantage we claim is, that danger from explosion is reduced to a minimum by being no accumulation of gas being by the Engine as fast as it is generated and hence is absolutely safe. The following is a test that we made with one of our Five-HorsePower Crude oil Engines running ten hours on the different gas oils:

Cal. Crude Oil...40 grav., 7½ gallons, at sc. \$.57½
Distillate...40 " 7½ " 80. " .60
Dom. Coal Oil...40 " 7½ " 12½c. .63
Gasoline...74 " 83/4 " 16c. 1.21½
City Gas... " 1000 feet, 2.00

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METAL MARKET.

New York Quotations:

	SILVER.	COPPER.	LEAD
May 1	61 1/2	12 50	3 12
3	61	12 25	3 12
4	60 1/4	12 00	3 12 1/2
5	60 1/8	11 75	3 12 1/2
6	61	11 50	3 12
7	60 1/2	11 25	3 12 1/2
8	60 1/2	11 00	3 12 1/2
10	60 1/2	11 00	3 12 1/2
11	60 1/2	11 00	3 12 1/2
12	60 1/2	11 00	3 12 1/2
13	60 1/2	11 00	3 12 1/2
14	60 1/2	11 00	3 12 1/2
15	60 1/2	11 00	3 12 1/2

MINING STOCK QUOTATIONS

BOSTON

Allonez	50	Franklin	11 00
Atlantic	26 00	Kearnsge	10 00
Boston & Mont	124 00	Ocoola	35 00
Butte & Boston	18 50	Quincy	112 00
Cal. & Helic	370 00	Tamarack	125 00
Centennial	9 00	Wolverine	10 50

COLORADO SPRINGS STOCKS

Aetna	01	Inslay	00 1/2
Alamo	00 1/2	Ironclad	00 1/2
Anaconda	50	Isabella	18 00
Argentum Juariata	23 1/2	Isabella Stamp	18 00
Bangkok Cora Belle	02 1/2	Jack Pot	1 00
Bankers	5	Jefferson	1 00
Ben Hur	06	Keystone	00 1/2
CK & N	03 1/2	Linton	00 1/2
C & C Manitan	04	Mollie Gibson	35 00
Creede & C C	00 1/2	Monteith	00 1/2
Crowley	11 1/2	Mount Rosa	10 00
C U Consolidated	02 1/2	Orphan Bell	11 00
Des Moines	02	Orphan Bell	11 00
Fannie Rawlins	07	Pharmacist	12 00
Favorite	10	Portland	35 00
Franklin	01 1/2	Peoples	02 1/2
Garfield Grouse	07 1/2	Sacramento	03 1/2
Golden Eagle	03 1/2	Specimen	00 1/2
Golden Fleece	16 1/2	Star of the West	00 1/2
Gold & Globe	05 1/2	Trachyte	03 1/2
Gold Standard	03	Union Gold	21 00
Humboldt	03	Virginia M	05 00
Ingham C	15	Work	00 1/2

DENVER STOCK REPORT.

Aetna	01	Elkton	1 10
Alamo	00 1/2	Erie	00 1/2
Anaconda	50	Garfield Grouse	07 1/2
Arcadia	00 1/2	Golden Fleece	35 00
" Consolidated	05	Goldsmith	00 1/2
Argentum Jun- ata	29 1/2	Gold Standard	05 00
Bangkok C-Bell	02 1/2	Indley	00 1/2
Bankers	09 1/2	Iron Clad	00 1/2
Ben Hur	06	Isabella	18 00
Bob Lee	02	Jack Pot	07 00
Boston & C. C.	01 1/2	Jefferson	11 00
Chimbarazo	01 1/2	Mollie Gibson	35 00
C. K. & N.	03 1/2	New Zealand	05 00
Colo. C. & M.	04	People's	03 1/2
C. C. Con	11	Pharmacist	12 00

HELENA, MONTANA

Am Den & M Co	85	Granite Mount	1 25
Bald Butte	2 25	Hope	1 50
Benton Group	10	Iron Mountain	10
Hi-Metallic	1 75	Mountain	30
Combination	35	Potosi	06

NEW YORK.

Crown Point	19	Sierra Nevada	1 35
Con. Cal. & Va.	1 80	Standard	1 35
Gould & Curry	30	Union Con	1 30
Hale & Norcross	80	Iron Silver	10
Homestake	50 50	Quicksilver	3 00
Mexican	30	Bulwer pfd	17 05
Ontario	10 50	Bulwer	22
Ophir	71	Yellow Jacket	25
Plymouth	20	Deadwood	45

SAN FRANCISCO.

Alta	05	Mono	15
Belcher	18	Nevada Queen	50
Best & Belcher	72	Ophir	71
Bodie Con	55	Potosi	06
Chollar	95	Savage	38
Con. Cal. & Va.	1 80	Sierra Nevada	35
Hale & Norcross	60	Utah	30
Mexican	30	Yellow Jacket	25
Gould & Curry	30	Bulwer	25

ST. LOUIS.

American Nettle	25	Elizabeth	20
Granite Mt.	1 20	Leo	3
Adams	60	Hope	1 40
Bi-metallic	1 75	Small Hopes	80

SALT LAKE CITY.

Ajax	70	Horn Silver	2 22
Alliance	30	Little Pittsburg	03
Nat. G. S.	00 1/2	Lucky Bill	20
Anchors	1 20	Mammoth	2 05
Bogart	9 00	Menor	10 50
Bull, Beck	8 00	Rover	47 1/2
Dalton	20	Silver King	18 50
Cent. Eureka	62 50	Silox Con	85
Daly	5 50	Swansea	2 40
Daly West	8 00	So. Swans	1 50
Four Aces	12	Toro	05
Galena	1 10	Uta	07
Geyser	1 45		

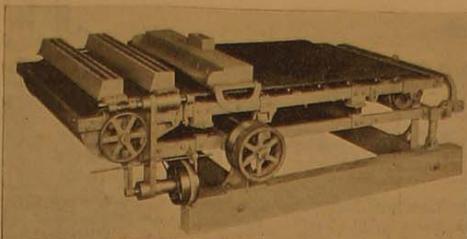
MEXICO.

Name of Company	State	Price
Angustias	Guanajuato	\$ 500
Asturias y Anexas	Zacatecas	220
Cerro Colorado	Chihuahua	10
Concepcion y Anexas	S. Luis Potosi	180
El Oro	Guanajuato	60
do, pre.	"	60
Luz de Borda	Michoacan	30
do, Free stock	"	30
Luz de Maravillas	Hidalgo	160
Real del Monte	"	1,100
Rosario y Anexas	Durango	50
do, pref.	"	50
San Rafael del Oro	Guanajuato	90
St. Gaudens y Anexas	Hidalgo	187
St. Gaudens	"	301
St. Maria de la Paz	S. Luis Potosi	480
Tlausingo	Puebla	40
Zomelahuaran (gold)	Vera Cruz	100
Zona Min de Pozos	Guanajuato	100

NOTE—The above Mexican stocks are figured on the basis of Mexican silver

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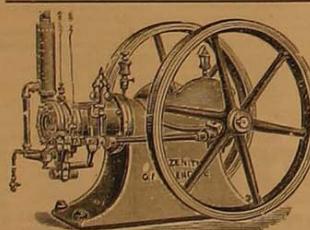
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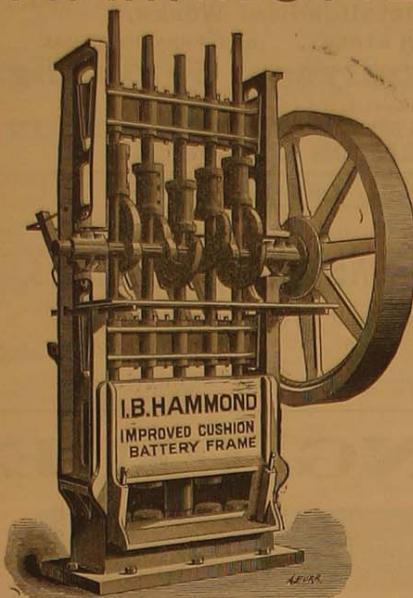
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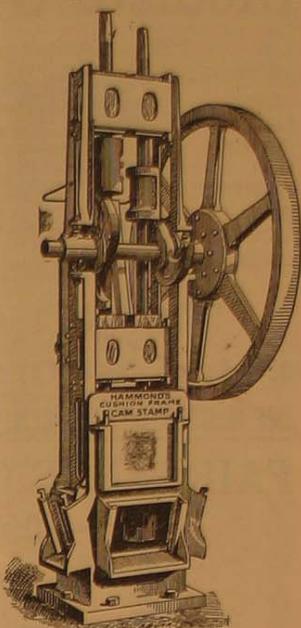
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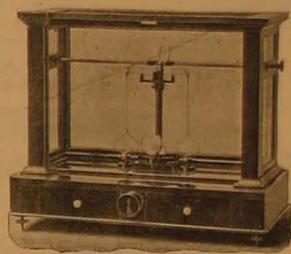
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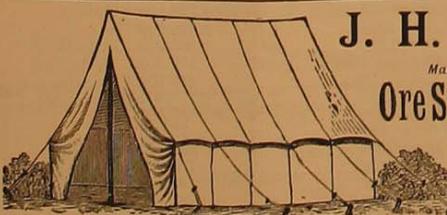
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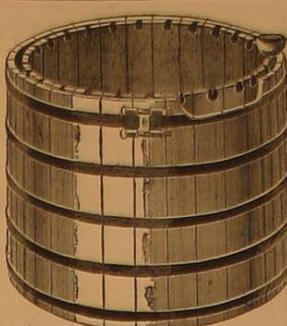
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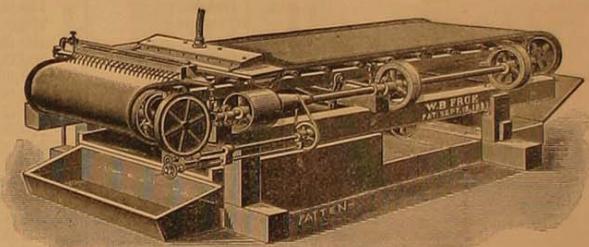
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NAMES OF MINES	LOCATION	No. of Shares	Capital Stock	Par Value	Amount of last Dividend	Date of Last Dividend	Total Amount Paid in Dividends	Kind of Mineral Produced
Aetna Cons.	California	100,000	\$ 500,000	\$ 5	\$ 10	Dec. 1896	\$ 80,000	Q.
Adams	Colorado	150,000	1,500,000	5	0 04	October 1895	693,500	S, L, C.
Alaska, Treadwell	Alaska	200,000	5,000,000	25	10	January, 1897	3,100,000	G.
Alaska Mexican	Alaska	200,000	1,000,000	5	37½	January, 1897	191,031	G.
Anaconda	Montana	100,000	30,000,000	25	1 25	Nov. 1896	2,250,000	C.
Anchoria Leland	Colorado	600,000	600,000	1	01	Jan. 1897	36,000	G.
Atlantic	Michigan	40,000	1,000,000	25	1 00	Feb. 1897	740,000	C.
Bald Butte	Montana	250,000	250,000	1	03	June 1896	470,500	S, G.
Bangkok C-Bell	Colorado	600,000	600,000	1	1	July 1896	107,510	S, L, C.
Big Six	Colorado	500,000	500,000	1	00½	May 1896	2,500	G, S.
Boston & Montana	Montana	150,000	3,750,000	25	3 00	Feb. 1897	5,375,000	G, C, S.
Bullion Beck and Champ	Utah	100,000	1,000,000	10	20	Jan. 1897	1,967,000	G, S.
Cariboo	British Col.	800,000	800,000	1	02	Dec. 1896	125,410	G.
C. O. D.	Montana	500,000	500,000	1	01	March 1896	25,000	G.
Calumet & Hecla	Michigan	100,000	2,500,000	25	15 00	Feb. 1897	48,350,000	C.
Centennial Eureka	Utah	30,000	1,500,000	50	1 00	Jan. 1897	1,890,000	S, L.
Champion	California	3,400	34,000	10	10	August 1895	216,900	G.
Consolidated, California and Virginia	Nevada	216,000	21,600,000	100	25	March 1895	3,592,800	S, G.
Coptis	Nevada	100,000	10,000,000	100	01	Feb. 1895	77,000
Copper Queen Consolidated	Arizona	200,000	2,000,000	10	25	June 1895	1,910,000	C.
Daly	Utah	150,000	3,000,000	20	25	August 1896	2,887,500	S, L.
Deadwood Terra	Dakota	200,000	5,000,000	25	50	August 1896	1,240,000	G.
De Lamar	Idaho	400,000	2,000,000	5	25	October 1896	2,250,100	S, L.
Derbec B Gravel	California	100,000	10,000,000	100	05	March 1894	265,000	G.
Dalton and Lark	Utah	2,500,000	2,500,000	1	00½	August 1896	87,500	S, L.
Elkhorn	Montana	200,000	1,000,000	5	06	June 1895	1,212,000	S.
Elkton	Colorado	500,000	500,000	1	02	Jan. 1897	191,960	G, S.
Enterprise	Colorado	500,000	2,500,000	5	25	June 1893	825,000	S.
Florence	Montana	500,000	2,500,000	5	01	Jan. 1897	118,096	S.
Franklin	Michigan	40,000	1,000,000	25	2 00	January 1894	1,240,000	C.
Galena	Utah	100,000	1,000,000	10	05	Jan. 1897	71,000	G, S, L.
Garfield Grouse	Colorado	1,200,000	1,200,000	1	01	Dec. 1896	24,000	G.
Golden Eagle	Colorado	1,000,000	1,000,000	1	01	Sep. 1896	10,000	G.
Golden Fleece	Colorado	600,000	600,000	1	01	Dec. 1896	563,179	G, S.
Gold Coin	Colorado	200,000	1,250,000	5	10	Feb. 1897	120,000	G, S.
Gold and Globe	Colorado	750,000	750,000	1	3-10	August 1896	36,000	G.
Granite Mountain	Montana	400,000	10,000,000	25	20	July 1892	12,120,000	S.
Great Western	California	50,000	5,000,000	100	10	November 1893	388,366	Q.
Hecla Consolidated	Montana	30,000	1,500,000	50	50	January 1897	2,160,000	S, G, I, C.
Helena & Frisco	Idaho	500,000	2,500,000	5	04	August 1896	475,000	S, L.
Homestake	Dakota	125,000	12,500,000	100	25	Jan. 1897	6,118,750	G.
Hope	Montana	100,000	1,000,000	10	10	February 1897	662,252	S.
Horn Silver	Utah	400,000	10,000,000	25	12½	January 1896	5,137,500	S, L.
Iowa	Colorado	1,000,000	310,000	1	01	Dec. 1896	60,000	G.
Iron Mountain	Montana	500,000	5,000,000	10	06	Nov. 1896	492,500	S.
Isabella	Colorado	2,250,000	5,000,000	100	01	Sep. 1896	202,500	G.
Kearsarge	Michigan	40,000	1,000,000	25	00	Dec. 1895	120,000	C.
Kennedy	California	100,000	10,000,000	1	48	August 1895	1,796,000	G.
Leadville Consolidated	Colorado	400,000	4,000,000	10	03	February 1893	316,000	S, L.
Maid of Erin	Colorado	600,000	3,000,000	5	02	November 1895	740,000	S, L, G, C.
Mayflower	California	60,000	1,200,000	20	1 10	December 1895	242,000	G.
Minnesota	Minnesota	165,000	16,500,000	100	1 50	July 1896	3,240,000	I.
Mollie Gibson	Colorado	1,000,000	5,000,000	5	05	January 1895	4,080,000	S.
Montana Lt	Montana	660,000	3,300,000	5	06½	October 1895	2,890,637	G, S.
Moose	Colorado	600,000	600,000	1	01	January 1896	186,000	G.
Morning Star	California	2,400	240,000	100	7 00	October 1895	446,400	G.
Moulton	Montana	400,000	2,000,000	5	05	February 1894	460,000	S, G.
Mercur	Utah	200,000	5,000,000	25	12½	Jan. 1897	600,000	G.
Mammoth	Utah	400,000	10,000,000	25	05	Nov. 1896	1,150,000	G, S, C.
Moon Anchor Gold	Colorado	600,000	600,000	1	01	July 1896	24,000	G.
New Elkhorn	Colorado	300,000	1,500,000	5	24	Sep. 1896	72,000	G.
New York & Hon. Rosario	Central A.	150,000	1,500,000	10	10	Jan. 1897	690,000	S, G.
Mt. Rosa	Colorado	1,000,000	1,000,000	1	00½	Oct. 1896	30,000	G.
Napa	California	100,000	700,000	7	10	January 1897	820,000	Q.
North Star	California	100,000	1,000,000	10	50	June 1893	450,000	G.
Nugget	Colorado	1,000,000	1,000,000	1	00½	Jan. 1895	10,000	G.
Omaha Consolidated	California	24,000	2,400,000	100	15	July 1894	97,200	G.
Ontario	Utah	150,000	15,000,000	100	10	January 1897	13,370,000	S, L.
Osceola	Michigan	50,000	1,250,000	25	1 00	February 1897	2,122,500	C.
Pacific Coast Borax	California	20,000	2,000,000	100	1 00	July 1893	422,500	B.
Parrot	Montana	230,000	2,300,000	10	10	June 1894	1,622,000	C.
Plumas Eureka	California	140,600	1,406,000	10	18	October 1893	2,696,295	G.
Portland	Colorado	3,000,000	3,000,000	1	01	January 1897	893,000	G, S.
Quicksilver Pref.	California	43,000	4,300,000	100	25	June 1891	1,823,911	Q.
Quincy	Michigan	50,000	1,250,000	25	00	February 1897	9,070,000	C.
Red Cloud	Idaho	200,000	1,000,000	5	10	December 1892	153,000	S, L.
Rico Aspen	Colorado	1,000,000	5,000,000	5	02	November 1894	325,000	S.
Sierra Buttes	California	222,500	2,225,000	10	12	October 1893	1,559,933	G.
Silver, Mg.	New Mexico	500,000	500,000	1	4 05	December 1891	300,000	S.
Small Hopes Consolidated	Colorado	250,000	5,000,000	20	10	March 1896	3,275,000	S.
Standard	California	100,000	10,000,000	100	10	June 1895	3,771,159	G, S.
St. Joseph	Missouri	250,000	2,500,000	10	25	Dec. 1895	2,524,000	L.
Silver King	Utah	150,000	3,000,000	20	25	Jan. 1897	90,000	S, L, G.
Smuggler Union	Colorado	50,000	5,000,000	100	1 00	October 1896	150,000	G, S.
Tom Boy	Colorado	200,000	200,000	10	20	March 1896	410,000	G.
Tamarack	Michigan	50,000	1,250,000	25	3 00	Dec. 1896	4,770,000	C.
Trinity River	Colorado	500,000	500,000	1	01	April 1894	37,500	G.
Union	Colorado	1,250,000	1,250,000	1	01	June 1896	73,000	S.
United Verde	Arizona	300,000	3,000,000	10	25	December 1893	562,500	C.
Utah	Utah	100,000	1,000,000	10	02	Nov. 1896	175,000	G, S.
Victor	Colorado	200,000	1,000,000	5	10	Dec. 1896	705,000	G.
War Eagle	B. C.	500,000	500,000	1	06	October 1898	187,000
Yankee Girl	Colorado	260,000	1,300,000	5	25	July 1891	520,000	S.

S, Silver,

G, Gold,

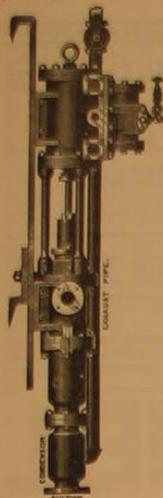
L, Lead,

C, Copper,

Q, Quicksilver,

I, Iron.

B, Borax.



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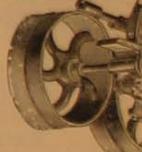
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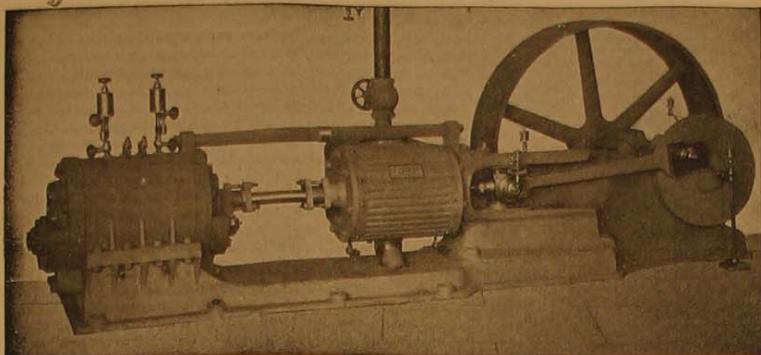


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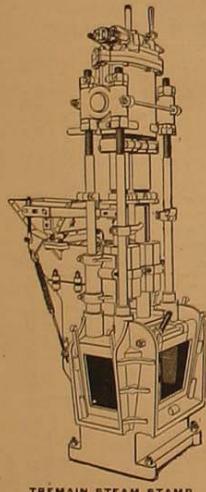
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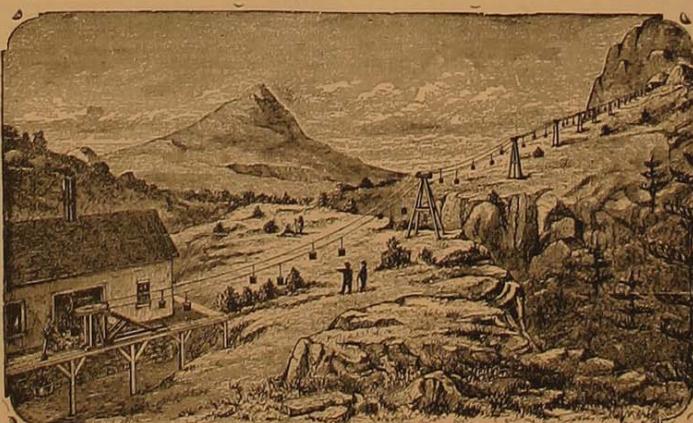
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Nogales...A.T.	El Paso	6.50	8.00	10.00
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Crittenden...."	El Paso	5.50	7.00	9.00
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Tucson....."	El Paso	4.35		
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	Denver	10.50	12.00	14.00
	Kansas City	11.00	12.50	14.50
Benson...."	El Paso	8.00	9.50	11.50
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Steins Pass, N.M.	El Paso	8.00	9.50	11.50
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Lordsburg...."	El Paso	8.00	9.50	11.50
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Silver City...."	El Paso	2.00	3.20	4.70
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	Kansas City	8.50	10.00	12.00
Hudson...."	El Paso	2.00	3.00	4.50
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	Denver	7.50	9.00	11.00
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Deming...."	El Paso	2.00	2.80	3.80
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Florida and Lake Valley	El Paso	2.00	2.80	3.80
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Nutt....."	El Paso	2.00	2.40	3.40
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.00
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El Paso...."	El Paso	1.50	2.00	3.00
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.00
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Las Cruces...."	El Paso	2.00	2.80	3.80
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.00
	Kansas City	8.00	9.50	11.50
Rincon...."	El Paso	2.00	2.80	3.80
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.00
	Kansas City	7.50	9.00	11.00

		Car Loads in dollars and cents per ton of 2,000 lbs.		
		Ore Concentrates		
FROM	TO	Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$300 per ton.
Engle.....N. M.	El Paso	2.20	2.80	3.80
Crocker....."	Pueblo	5.50	7.00	9.00
	Denver	6.50	8.00	10.00
	Kansas City	7.50	9.00	11.00
Lava....."	El Paso	2.20	2.80	3.80
	Pueblo	5.50	6.70	8.70
	Denver	6.20	7.70	9.70
	Kansas City	7.20	8.70	10.70
Carthage....."	El Paso	2.40	3.00	4.50
	Pueblo	5.20	6.50	8.70
	Denver	6.20	8.20	10.20
	Kansas City	7.20	8.70	10.70
San Antonio....."	El Paso	2.60	3.20	4.70
	Pueblo	5.20	6.70	8.70
	Denver	6.20	7.70	9.70
	Kansas City	7.20	8.70	10.70
Magdalena....."	El Paso	2.80	3.50	5.10
	Pueblo	5.00	6.50	8.50
	Denver	6.00	7.50	9.50
	Kansas City	7.00	8.50	10.50
Albuquerque....."	El Paso	2.60	3.20	4.70
	Pueblo	5.00	6.00	8.00
	Denver	5.50	7.00	9.00
	Kansas City	6.50	8.00	10.00
Bernalillo....."	El Paso	3.20	4.20	5.70
	Pueblo	4.20	5.70	7.70
	Denver	5.20	6.70	8.70
	Kansas City	6.20	7.70	9.70
Wallace....."	El Paso	3.40	4.40	5.90
	Pueblo	4.20	5.70	7.70
	Denver	5.20	7.20	9.20
	Kansas City	6.20	7.70	9.70
Los Cerillos....."	El Paso	3.60	4.60	6.10
	Pueblo	4.00	5.50	7.50
	Denver	5.00	6.50	8.50
	Kansas City	6.00	7.50	9.50
Flagstaff, A.T. Seligman....."	El Paso	6.50	8.00	10.00
	Pueblo	9.50	10.00	12.50
	Denver	10.50	12.00	15.00
	Kansas City	11.50	13.00	16.00
Peach Spgs.....Hackberry....."	El Paso	7.50	9.00	11.25
	Pueblo	8.00	9.50	11.50
	Denver	9.00	10.50	12.50
	Kansas City	10.00	11.50	15.20
Kingman....."	El Paso	7.50	9.00	11.25
	Pueblo	8.00	9.50	11.75
	Denver	9.00	10.50	14.25
	Kansas City	10.00	11.50	15.50
Yucca....."	El Paso	7.50	9.00	11.25
	Pueblo	8.50	10.00	12.25
	Denver	9.50	11.00	14.25
	Kansas City	10.00	11.50	15.50
Needles...Cal.	El Paso	7.50	9.00	11.25
	Pueblo	8.00	9.50	11.75
	Denver	9.00	10.50	14.25
	Kansas City	10.00	11.50	15.50
Fenner....."	El Paso	8.25	9.75	12.75
	Pueblo	9.00	10.50	12.25
	Denver	10.00	11.50	16.25
	Kansas City	11.00	12.50	16.25
Bagdad....."	El Paso	8.50	9.00	11.25
	Pueblo	9.00	10.50	12.25
	Denver	10.50	12.00	17.50
	Kansas City	11.50	13.00	17.20
Daggett....."	El Paso	9.00	10.50	14.50
	Pueblo	10.00	11.50	17.00
	Denver	11.00	12.50	18.25
	Kansas City	12.00	13.50	18.00
El Paso....."	El Paso	9.00	10.50	14.75
	Pueblo	10.00	11.50	17.25
	Denver	11.00	12.50	18.25
	Kansas City	12.00	13.50	18.00
Barstow....."	El Paso	9.00	10.50	15.25
	Pueblo	10.00	11.50	17.25
	Denver	11.00	12.50	18.25
	Kansas City	12.00	13.50	18.00
El Paso....."	El Paso	9.50	11.00	15.21
	Pueblo	9.50	10.50	17.21
	Denver	10.50	12.00	22.80
	Kansas City	12.50	14.00	18.37
Kramer....."	El Paso	9.00	2.80	3.80
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.80
	Kansas City	8.00	9.50	11.50
Mojave....."	El Paso	2.00	2.80	3.80
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.80
	Kansas City	8.00	9.50	11.50
Gila Bend....."	El Paso	10.00	11.50	15.75
	Pueblo	11.00	12.50	15.25
	Denver	12.00	13.50	22.50
	Kansas City	13.00	14.50	18.80
Mojave....."	El Paso	2.00	2.80	3.80
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.80
	Kansas City	8.00	9.50	11.50
El Paso....."	El Paso	2.00	2.80	3.80
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.80
	Kansas City	8.00	9.50	11.50
Las Cruces...."	El Paso	1.50	2.00	3.00
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.80
	Kansas City	8.00	9.50	11.50
Rincon...."	El Paso	2.00	2.80	3.80
	Pueblo	6.00	7.50	8.50
	Denver	7.00	8.50	10.80
	Kansas City	7.50	9.00	11.00

by the Railroad Company, at owner's expense, will govern the value and determine the rate.

Agents must cause shippers to understand the condition upon which these rates are based, and should make their receipts read:

"Rates subject to correction according to value at destination."

These rates only apply on lots of ten tons or over. On lots of four tons and under ten, 20 per cent will be added to above rates.

Base Metal, Copper Matte, Bar and Black Copper, valuation not to exceed \$300 per ton.

Charges on Ore in car loads must be guaranteed, and on lots less than a car-load must in all cases be prepaid.

Omaha Rates.—The Rates to Omaha, Neb., all grades, will be \$ per ton higher than the rates to Kansas City.

Note.—All shipments of Ore and Concentrations valued not to exceed \$50 per ton must be billed at the rate for Ore and Concentrations, "Valuation over \$50 not to exceed \$100 per ton," and shipping receipt must be issued by agent at said rate. Agent at destination is authorized to correct the rate for Ore and Concentrations, "Valuation not to exceed \$50 per ton," upon presentation of properly certified smelter returns, showing that the value does not exceed \$50 per ton.

Intermediate points not named will take rates provided for next station beyond.

ORE TARIFF.

From Points in New Mexico, Arizona and California, to El Paso, San Francisco and Vallejo Junction.

SOUTHERN PACIFIC R. R. COMPANY.

		Car Loads in dollars and cents per ton of 2,000 lbs.		
		Ore Concentrates		
FROM	TO	Valuation not to exceed \$50 per ton.	Valuation not to exceed \$100 per ton.	Valuation not to exceed \$300 per ton.

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Manufacturers of Bar and Pig Lead, Lead Pipe, Antimonial Lead, Copper Ingots,
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Especial Attention to Sampling by most Approved Processes.

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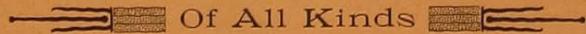
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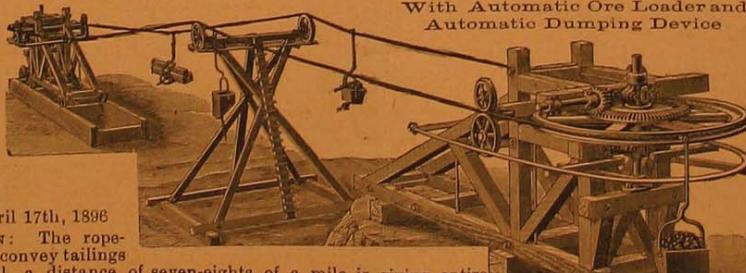
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For Conveying
Ore,
Cordwood,
Etc.
*



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Vulcan Iron Works.—GENTLEMEN: The rope-way furnished by your Company to convey tailings from Morgan Mill to Mexican Mill, a distance of seven-eights of a mile, is giving entire satisfaction. We transport 200 tons of tailings in ten hours; one man does the whole business, including elevating tailings from hopper in the ground, operating Vulcan self-loader, and attending to the ropeway generally. The self-dumper requires no attention whatever. The Vulcan loader I consider the best feature in the whole Ropeway, making it possible for one man to load 200 tons in ten hours.

Yours very truly,
J. P. WOODBURY, Supt.

VULCAN IRON WORKS,

*Manufacturers of Mining Machinery,
SAN FRANCISCO CAL.*

Babbit Metal

Eclipse, guaranteed best Babbit Made
COPPER FOR AMALGAMATING PLATES,
Braziers Sheet Copper.

BATTERY ZINCS, ROOFING TERNE PLATE

Pacific Metal Works,
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CLARENCE HERSEY,
Assayer and Chemist,
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Samples by Mail or Express Re-
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SPECIMEN ASSAY PRICES:

Gold silver and lead, \$1.00; any two of the above, 75c; any one of above, 50c; copper analysis, \$1; platinum, nickel or tin, \$5.00.
Write for full price list and mailing envelopes

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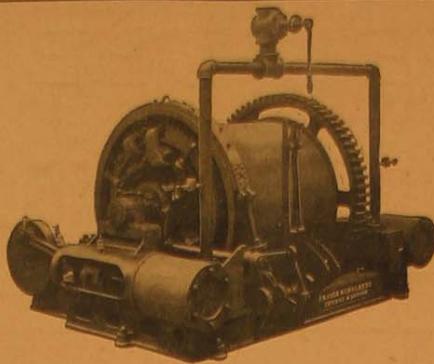
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Have Brought Out a New Line of
MEDIUM SIZED

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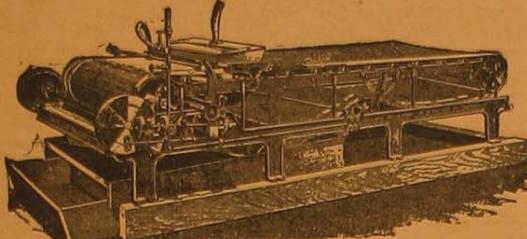
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STAMP MILLS, SMELTING FURNACES,
CYANIDE PLANTS, ORE CRUSHERS,
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"PELTON TYPE"

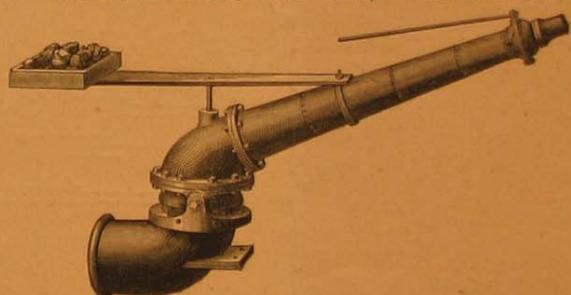
KNIGHT WATER WHEELS

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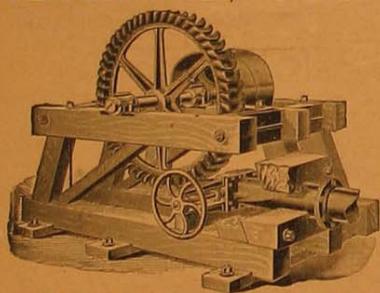
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The above cut illustrates the improved form of Hydraulic Giants, in which the Center Bolt is dispensed with, which was so liable to catch trash. Prices and catalogues of our specialties sent free on application.



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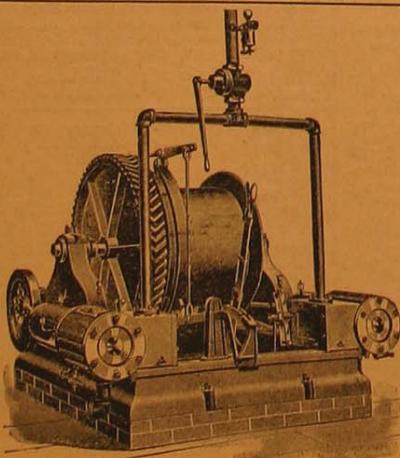
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